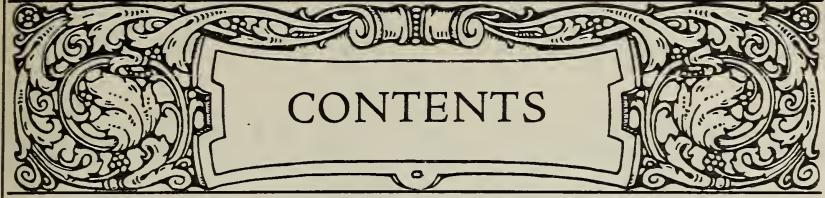


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CINCINNATI, OHIO

GLEANINGS IN BEE CULTURE

AUGUST, 1918

EDITORIAL

THE BEEKEEPERS of the United States are going to be allowed all the sugar necessary to feed their bees—if the sugar is in any way obtainable. This is the definite and emphatic statement the Sugar Division of the U. S. Food Administration made as late as July 20.

Many of our readers, after seeing our editorial on page 394, July issue, entitled "Don't Extract too Closely," referring to the probable sugar shortage, were very greatly alarmed. The further statement, that Dr. Phillips would probably advise the Sugar Division to put restrictions upon sugar for beekeepers, caused quite general alarm—even panic—among honey-producers. Beekeepers were confused as to the whole sugar situation. Accordingly the Editor of Gleanings decided he could not do anything better for the beekeeping industry than to go to Washington, see Dr. Phillips and the Sugar Division of the United States Food Administration, and try to get a definite decision in favor of the beekeeper. So we did this.

As a result, we are very happy to inform our readers that the situation is not nearly so bad as it looked at the time of our last issue.

Our readers may not generally know that in the Government's Official Bulletin for June 24, the Food Administration gave notice that "honey manufacture" would be placed in "the less essential class" of production, and so would be allowed only 50 per cent of its normal sugar requirements. Some high authorities held that "honey manufacture" meant honey production by the beekeeper. But this view of the ruling is not correct, as the Editor of Gleanings learned definitely while in Washington.

The term "honey manufacture" did not refer to feeding sugar to bees. It meant only sugar for adulterating (mixing or compounding with) honey; and hence the term "honey manufacture" was used. Mr. Wilson of the Sugar Division in charge of the distribution of food stated to us positively that there never had been any desire on the part of the Government to shut off needed sugar for feeding bees, and no such action whatever is now intended. Fortunately, Mr. Wilson's brother is an enthusi-

astic beekeeper, and he himself fully realizes that sugar under some conditions is of vital necessity for the beekeeping industry. "But," said he, "the available amount in sight is not only less than it was at this time last year, but we may have to go further if the shortage becomes more acute, and allow only half the amount to individuals and to industries."

How are the beekeepers to get sugar? All that is necessary, said Mr. Wilson, for every beekeeper who really needs sugar and must have it, is to write a letter to the United States Food Administration, Sugar Division, at the capital of his own State. This letter must be plain, concise, and, as a matter of fact, should state actual needs, the number of colonies, and the amount required per colony. The State Administration issues a permit which allows the beekeepers to go to any dealer or wholesaler who has a supply of sugar, and get from that dealer the amount of sugar called for.

Right here let us say that the beekeeper must not get the idea that the permit alone will solve the sugar problem. It solves it only so far as the Government can solve it for him. If the dealer does not have the sugar he can not supply it, of course, and there is great danger that the dealer may not always have it. The beekeeper must be alert in seeking it from whatever source is within his reach.

Perhaps it is not necessary to remind the reader that the statement setting forth the need of sugar must be based on actual facts. Any other kind of statement, whether made in the form of an affidavit or not, may make the beekeeper grave trouble; for it must be remembered that the United States Food Administration has almost unlimited authority for punishing misrepresentation or a violation of its rulings.

A word in regard to the attitude of Dr. Phillips in suggesting a reasonable restriction on sugar for beekeepers. He has been a most faithful and untiring worker in the Bureau of Entomology. He has done a great many things for bee culture that will have a far-reaching influence on the business. He is not only loyal to the interests of beekeepers, but he is intensely loyal to the cause of our allies. He says that our dear Uncle Sam has granted everything that the beekeepers have asked of him, and that beekeepers now should be very careful not

(Continued on page 461.)

IT MAY NOT be generally known, but milkweed, that was formerly supposed to be a pest to bees, is a very important source of honey production in central and northern Michigan. In quantity it ranks, where it grows, with raspberry and clover; and in quality it is nearly the equal of either. It was formerly supposed to be destructive to bees on account of the little pollen appendages that stick to the bee's legs. These do little or no harm, as these appendages are pulled off by other bees.



DR. E. F. PHILLIPS, of the Bureau of Entomology, Washington, D. C., says that he formerly received requests from beekeepers over the country, urging him to use his influence to the end

that they be relieved from the draft or placed in deferred classification on the ground that they were producing food, namely, honey. He takes the position that if the local draft boards have not seen fit to put beekeepers in deferred classification, he certainly will not lift a finger to do so. He feels that it would be unpatriotic for him to do it, and he is absolutely right. He does feel, however, that local draft boards should have the same consideration for beekeepers as for other food-producers—no more, no less.



ON SATURDAY NIGHT, June 22, the thermometer was down to 45 at Medina with every indication

Honey Flows at Low Temperatures. that there would be a frost. On Sunday morning the mercury rose to 55

in the shade. The sun came out bright, however, but there was a cold north wind; and even up to 2 o'clock in the afternoon the mercury did not go higher than 62. In going out to the apiary we noticed an unusual furore among the bees and thought it was robbing. We concluded it might be playspells, and went back to the house, for it was too cold to be comfortable outside. We had turned on the steam heat the night before, and the radiation was almost equal to what it usually is in winter, and yet we were not uncomfortably warm in the house. Going out into the yard again we noticed such a roar of bees that we thought it must surely be robbing, as we could not conceive of clover yielding nectar when the temperature was so low.

A careful examination showed that the bees were unquestionably getting something somewhere. Searching the yard we found the bees were going over the buildings. Could it be possible the bees were gathering real nectar at such a low temperature, and doing it with such excitement. The roar

and high keynote were like those of robbing. The bees seemed to be almost in a frenzy. We finally examined a clover field and found the bees dotted here and there on the heads of clover, indicating a flow. The mercury still dropped, but yet the roar of bees continued.

About two weeks prior to this, clover had just started. The temperature was high, but there was no nectar. Occasionally there would be a day when for a few hours the bees worked a little on clover; but they worked only at intervals, and the yard had to be fed to keep it from starvation. On Saturday, the 22d, it was quite cold. On the Friday previous, there was a heavy downpour of rain with a furious blow of wind. The ground was literally soaked. The following day (Saturday) was cold, and no activity was noticed among the bees. The boys put on feeders, fearing that brood-rearing would be checked.

We can not account for this flow of nectar at so low a temperature on Sunday except on the ground that clover had had a rest for a week. It was too dry, too cold, or something else; but when the heavy downpour of rain came on, it must have given the nectar in the clover blossoms a boost, with the result that, in spite of the cold, the steam heat, and the overcoats of the owners of the bees, there was a large amount of nectar. On examining the clover blossoms we were surprised to find so much nectar—so much, indeed, that the bees worked more like robbers than quiet workers on clover.

Our Mr. Thompson, lately from the West Indies, reports that the heavy flow from logwood comes in January and February. At that time of the year the temperature occasionally goes quite low; yet he reports that sometimes there are heavy flows, and the temperature down to 60.

In view of the evidence presented, we shall have to conclude that there are exceptions to all rules. We have become so in the habit of thinking that hot muggy weather is a necessary condition for a honey flow that we have ceased to think of any activity on the part of the bees when the mercury is down to 50 and 60 Fahrenheit.



MANY BEEKEEPERS have said this season that if they had had more bees they could have secured

Buy Bees in the Fall. proportionally more honey. They could not buy bees last spring in the South nor elsewhere. The man who has a prospect or a possibility of getting \$10 or \$20 worth of honey per colony is not disposed to sell his bees for \$5 or \$6 before the honey flow, and the other fellow is not willing to pay more on the chance. But after the season is over, and especially if the season has been a failure, Mr. Man will be glad to sell his bees, and sell cheap. If he has no prospect of a fall



flow, and if he fears that he can not get sugar to feed or has not the means to buy sugar, he will be very glad to sell to the other fellow who has a good crop, and who will have a reserve of combs to give to colonies that he can purchase at a fair price. The seller and the buyer will both be benefited.

The difficulty of getting bees last spring, with the probability that the South will not be able to supply the demand next spring, emphasizes the importance of getting bees now when they can be secured at moderate prices. Where one has a good cellar, or uses modern methods of packing bees, he can afford to pay a fair price; and the other fellow, if he did not get any crop, and especially if he has "got the blues," can afford to sell at a very reasonable figure, and will be glad to do so.

Gleanings wishes to suggest that the buyer and seller can get together (if impossible by other means) thru the advertising columns of the various bee journals.



IN THE LAST ISSUE we discussed a few of the chief sources of sweets to which the

 **Where We Get the Sweets We Eat.** American people are addicted, and we pointed out that the free use of these is injurious.

Fortunately there are forms of sugar that are of better value for human consumption.

In the United States there are probably five million acres planted to apple trees, more than the acreage of all other fruits combined. The State of Missouri has over 14 million apple trees, while our own State of Ohio, which is in the region of corn and hogs, has over eight million. Add to these enormous figures the crops of peaches, plums, pears, cherries, berries, and citrus fruits, and it will be seen that the American people do get great quantities of natural sugars, in such form that they may be digested and assimilated readily. In addition to fruit sugars these foods furnish nourishment of other types, including the highly important fruit acids.

It is more than a coincidence that there is a close relationship between fruit growing and honey production. Without the bee there would be a much smaller fruit crop than is now gathered, and, in all probability, the bee does more good to the fruit-grower in pollinating his fruit than the good that the beekeeper gets from the honey crop. The honeybee is, therefore, a great producer of sugar, and all of it is natural sugar. The amount of fruit sugar produced and used in the United States cannot even be estimated, but there are great quantities of sugar in the 100 million dollars' worth of apples which the United States produces in the average year.

Some of the fruits contain so much sugar that it is useless to add any cane or beet

sugar in preserving them. For example, when prunes were unusually cheap a few years ago in California, it was seriously proposed to manufacture sugar from them. Grapes are made into raisins without the addition of sugar. There is also a great amount of sugar in the date and the fig, both of which are being raised in the United States in increasing quantity.

The maple sugar industry was formerly an important one in parts of the country, and northern Ohio did not take a back seat to any other part in this industry. The amount of maple sugar produced is small, yet it is about half that of the honey production of the country. But honey production may be increased, while the maple sugar industry is decreasing. There has been a movement on foot this year to increase the production of maple products on account of the sugar shortage, but this has taken the form of advising the tapping of trees that are usually neglected, and it is not seriously proposed to plant any more sugar maples.

Maple sugar is sucrose like cane and beet sugar. It, however, has the advantage that it contains mineral salts and other products, making it a more natural sweet than its more popular rivals.

In closing the discussion of the rivals of honey we cannot fail to mention the ways in which honey surpasses all of these sweets. It is a predigested sweet, putting no tax at all on the digestion of those who eat it. It gives up its energy as quickly as any other form of sugar, and at the same time it furnishes a small amount of protein, considerable mineral salts, and, above all, it contains vitamines, the products found in some foods in minute quantities which further the processes of growth. What more could we desire in food? It is an energy food and is not taken primarily for its body-building properties. Yet it puts no unnatural strain on the digestion, it has a flavor we all know surpasses that of any other sweet, it has properties which make it desirable for use in baking, and it does have some body-building value.

The beekeeper ought to remember these things when talking up his market. He has no reason not to be proud of his product. There is no talking point about any form of sugar which he cannot truthfully use about his product. Then, too, his is an industry which uses no land useful for other agricultural purposes; he does not take a valuable food like corn and make it into a poor food like glucose. His product in its making does not deplete the soil.

With all of these facts at his command—and all of them are facts and not fancy—the beekeeper ought to be the best salesman on earth. What more could he ask than a product like this to sell? Now that the demand for honey is so great on account of the sugar shortage, the beekeeper ought to take advantage of the opportunity presented to talk up honey so that when the war is

over the consumer will not go back to his bad habits of excessive sugar eating but will continue the use of honey.

The beekeeper ought also to talk the use of fruit as a source of sugar, not because it does his business any good but because it will help the health of those about him. We ought all to be missionaries of health and to do all we can to reduce the sugar debauch of the American people. The beekeeper who is also a fruit-grower has the advantage over his fellow beekeeper who grows no fruit. These two branches of farming go well together and they make the greatest sugar combination on earth!



WE PROMISED in our last issue to show illustrations of a form of shipping cage made wholly of wood that would be accepted by the postal authorities.

Pound Pack-ages of Bees for Parcel Post. We have not yet accepted the design that will be cheap enough to put on the market; but in our next issue we hope to show something made entirely of wood that will eliminate wire cloth and which will deliver bees by mail long distances with the loss of hardly a bee. The cage is not patented, and any one can make it provided he has suitable machinery for it.

In a general way, it is nothing more nor less than a box made of $\frac{3}{8}$ -inch basswood and of a suitable size and shape to hold one, two, or three pounds of bees. To provide ventilation, saw-cuts $\frac{1}{8}$ inch wide and $\frac{3}{8}$ inch apart, and reaching to within half an inch of the corners, are made in the sides, ends, top, and bottom. This idea came from E. J. Ashley of California, and is a good one.

The difficulty encountered was in making a cage that would be cheap enough and, at the same time, strong enough to stand the shocks and bangs received in the mails; but we feel confident that we shall be able to present a cage idea in our next issue that will fill the bill.

In this connection, we can not make it too emphatic that shippers should not attempt to send bees in poorly designed cages. One bad shipment, or a few bad ones, might be the means of revoking the privilege entirely. It would be well, therefore, for prospective shippers to wait until we can present a form of cage that will be suitable and which the United States postal authorities have favorably passed on.



WHILE VISITING J. N. Harris of St. Louis, Mich., one of the best beekeepers in

A New Kink of the Trade. that State, he gave us an idea that looks good. Altho he has a modern power extracting outfit, and can extract his combs as clean as any one, he says it pays,

and pays well, to extract his combs a second time, about five or six weeks after the first extracting. In the mean time the combs after the first extracting gather a slight amount of moisture—just enough to make the residue flow again. When the combs are put back in the machine and given another whirl a considerable amount of honey will be secured—enough to pay for the time and trouble several times over, said Mr. Harris. The work can be done at a time when it is most convenient to the beekeeper, when the weather is bad outside. Of course, it goes without saying, that the extracting-room should be warm, and it usually will be in August or early September.

This is a seasonable idea that during war times may be productive of much good. It may not work in all localities and with all kinds of honey; but if one can increase his honey crop by even a small percentage by a second extracting during these strenuous war times, he should do it.

Mr. Harris works on the plan that most beekeepers do—extracts after the crop has been secured, and this requires a complete set of combs. After the extracting the combs are stored in supers in the extracting-house, and allowed to stand four or five weeks, when they are extracted again. In that case the supers would have to be staggered to let in air or moisture.

When wet extracting combs are put back on the hives it has been the belief that the honey is saved. On this point there has been much doubt. Some of our best beekeepers hold that such honey is wasted by the bees gorging (overeating). If this is true, the honey is lost. The Harris plan will save it for a starving world.



MOST OF the honey-producers of the country who have produced comb honey in former years, are now

The Production of Comb Honey Eliminated. producing extracted, and some of them are saying that even after the war is over they will never go back again to the production of comb honey. The amount of it that will be produced this season will be very small, and the production will be mainly from the small beekeepers who sell in their own local market.

There is no doubt there will be a big demand for comb honey in the big markets this fall which cannot be supplied. The exigencies of the war and the high price of extracted honey (even higher than comb honey in many cases) has made it a patriotic duty for every beekeeper to produce as much extracted as possible, to say nothing of the fact that he can produce a pound of extracted at about half the cost he could produce a pound of comb honey. Some of the largest producers in the Middle West have told the Editor that they could handle



twice as many colonies for the production of extracted as they could for comb, and that after the war is over comb honey will have to bring two or three times the price of extracted before they will go back to section honey. It will probably take some years before comb honey will get back to its own, even if it ever does. The big supply factories have, for the time being, discontinued the manufacture of section-honey boxes, and are running their factories mainly for the production of hives and frames for extracting.

We can not help feeling, however, that an effort should be made to reinstate the comb-honey business, after the war is over, because there is a very large consuming trade that recognizes the superior quality of honey in the comb, and it has an advertising value in the honey business that is valuable. It looks so good (and tastes so good), don't you know?



IN SOME STATES, sweet clover is classed as a noxious weed, and the township road

Sweet Clover supervisors are ordered to cut it just and before it comes in **Town Councils.** to bloom. In other cases municipalities

have passed special ordinances requiring the road commissioner to put it in the noxious weed class. The result is that a most valuable forage plant for bees and stock is cut down while the worst kinds of weeds are allowed to grow freely everywhere. Time, time and again, along the roadsides we have seen sweet clover cut down while burdock, Canada thistle, and other noxious weeds are allowed to grow.

Several of the States, including Ohio, have repealed that section of the noxious weed laws that includes sweet clover, not because beekeepers have asked for the repeal, but because farmers and experiment stations have shown that for farmers the plant is one of the most valuable forage plants ever known.

It appears that sweet clover had been placed under the ban at Huntington, Ind., by the town council. W. D. Keyes appeared before that body about a year ago, explaining the value of the plant with the result that the council repealed that portion of the ordinance requiring sweet clover to be cut by the street commissioners. Where ordinances like this are in effect we suggest that other beekeepers follow Mr. Keyes' example.

Wherever sweet clover is classed as a noxious weed, beekeepers should unite with the farmers in putting a petition before the state legislature and ask for the repeal of the section of the law that includes sweet clover. All it needs is a little pressure brought to bear. Some one must make the start, and beekeepers should take the initiative, if no one else does.



Beekeepers Will Be Allowed Sugar Needed.

(Continued from page 457.)

to abuse their privileges by asking for sugar in unlimited quantities, especially since our allies have only a very small percentage of the sugar we have. Dr. Phillips believes it is the patriotic duty of every beekeeper to get along without sugar if he can. The man who can afford to do without, says Dr. Phillips, is the one who has secured a good crop of honey in a locality where there is no bee disease; and in speaking of bee disease, he says the beekeepers whose bees have it, should of course have sugar, as they can not feed honey.

Furthermore, Dr. Phillips believes that the beekeeper who has secured a small crop of honey—25 pounds we will say—and who sells it at 20 cents, and replaces it with nine-cent sugar, is profiteering. On this point we can not agree with Dr. Phillips. If that man is profiteering, then the man who sells his whole crop of, we will say, 50,000 pounds for 20 cents a pound is profiteering. In a sense, high prices of any kind are robbing our allies in Europe at a time when their war chests have been drained dry, and at a time, too, when they are struggling for bare existence. Dr. Phillips' view is that if we have any red blood in us—any sense of fairness—we ought to make the burden on our allies as light as possible. Good and all right.

But for the beekeeper who has had very indifferent success this season, harvesting very little honey and needing all the funds possible (and there are many such), we believe there is another justifiable angle from which to view the selling of his even limited supply of honey. A pound of honey extracted and placed on the market replaces for human consumption fully a pound of sugar. A pound of sugar (purchased by the beekeeper at one-half the price he could obtain for his honey) replaces for bee consumption fully a pound of honey. Isn't it merely a question, then, of whether the beekeeper (not generally rich) should stand a high-priced food for his bees, or whether the man abundantly able and wishing to buy honey should not be permitted to spend his money for a high-priced substitute for sugar? In other words, shall the beekeeper or the man ready to purchase a high-priced sweet, stand the high cost of feeding the bees the coming winter?

Later.

Confirming what has been said above as to beekeepers being allowed all the sugar necessary for feeding, there has just come to hand (July 22) the official "Food Conservation Notes," issued by the U. S. Government under date of July 6. In this official statement "bee culture" is specifically mentioned as one of the industries that "are now given 100 per cent of their sugar requirements." This is only further official assurance that the Sugar Division expects beekeepers to be allowed the sugar they need.

ONE of our favorite amusements at the close of the honey flow is that of checking up the amount of surplus honey each colony has

produced, then figuring how much our crop would have been, if all colonies had done as well as the few best ones. Those who have never indulged in this pastime can have no idea how fascinating it is, for the figures sometimes give a theoretical honey crop that almost staggers the imagination. Long before we were married my husband had annually built air castles out of that difference between what the bees actually did and what they might have done. After many years (more than he cares to admit) he says he has greatly profited by the air-castle business, because it has led him to look for the reasons for the difference in yields of colonies in the same apiary, and to correct some of the deficiencies which cause a lower yield.

At the time I came into the firm he was considerably puffed up over his accomplishments along two lines, uniformity in the strength of the colonies at the beginning of the honey flow and uniformity in the strain of bees, all, or nearly all, queens being from the same mother and of the same age. However, in spite of this uniformity along these two lines, the yield per colony continued to vary tremendously.

Of course, we all know that one reason for the difference in yield is that some colonies are thrown out of condition during the honey flow by preparations for swarming, lack of room for storing and ripening the incoming nectar, some accident to the queen, or some other cause or combination of causes. We know that beekeepers have made wonderful progress along the line of coaxing the bees thru the honey flow, without any loafing. (But that is another story concerning which I hope to say something later.)

During recent years we have been unable to requeen systematically or to equalize the colonies previous to the honey flow, as was our previous practice. However, we now secure nearly the same degree of uniformity in the strength of colonies at the beginning of the honey flow as we did by the other more laborious method, and are doing it by the more logical method of removing the factors that cause the weaklings rather than curing the trouble by equalizing in the spring. We now sometimes think that the time is not far distant when beekeepers will be able to attain a uniformity in per-colony output approaching the long-dreamed-of goal of every colony yielding as much as the best ones.

Critical Periods in Colony Existence and Prosperity.

There are certain critical periods in brood-

BEES FOR THE WINTER CLUSTER

The First Step in Preparing the Colonies for Next Year's Honey Flow Should be Taken Now

By Belva M. Demuth

rearing thruout the year during which any deficiency in the needs of the colonies may affect tremendously their future prosperity, or, perhaps, even be

the cause of their death. At other times colonies may be short of stores, cramped for room, have inadequate protection against the cold and wind, or even be queenless for a considerable period of time without any real danger to their existence or prosperity. But during these critical periods any deficiency in the needs of the colony which affect brood-rearing adversely, is extremely dangerous. For instance, it is not dangerous to the existence of the colony to have no brood-rearing during a considerable period of time in July or early in August. If this occurs, however, during the latter part of August and early in September in the clover region, the colony is practically worthless for winter. This is one big reason for the great difference in the strength of colonies at the beginning of the honey flow. Only those colonies having no deficiencies in their needs during the various critical periods come up to the honey flow in prime condition.

These critical periods in colony existence and prosperity are so important that I think the bee journals should, each year, point them out, as they occur in the various parts of the country, for the benefit of those beekeepers who may not fully realize their importance.

The Critical Period of August-September.

The beekeeper's calendar should begin in August. This is why I am writing this now, for, in the clover region, the first of these critical periods comes some time in August and early September. At this time is laid the first course in the foundation for next year's honey crop, namely, the production of the bees that form the winter colony. The worker bees in our hives the fore part of August are not the ones that will form the winter cluster, for most of them will be dead before cold weather. If there is an absolute dearth of nectar, these workers may so save their energy that they will live several months but they cannot, so far as we know, live thru the winter. Therefore, if we are to have colonies composed of bees whose lives can span the broodless period of winter, they must be reared some time after the first of August.

When there is a dearth of nectar during this period (which is usually the case), brood-rearing is almost entirely suspended in colonies having old queens, even tho they have an abundance of stores, as well as in colonies that do not have an abundance of stores, even tho they may have young queens. With both young queens and an abundance of stores, however, a sufficient number

of young bees are reared for winter even during a severe dearth of nectar. Queens reared in May or June are not nearly so active in egg-laying during the following August and early September as are those reared in August. If we could have our way about it, we would have our young queens begin to lay just in time to produce the workers for the winter colony or about the middle of August. The influence of an abundance of stores upon brood-rearing during a dearth of nectar is well known among beekeepers, yet probably no defect in beekeeping practice causes as much annual loss as that of taking the lion's share of the honey and leaving too little for the bees, thus compelling them to live from hand to mouth during the critical periods of brood-rearing.

Another condition, which is sometimes encountered, is that of just enough nectar available this month to tease the bees along and wear them out prematurely with scarcely enough brood-rearing to replace the wastage of bee life. Under such conditions the colonies grow weaker every day and begin the winter with small clusters. We know of no remedy for this condition except to move the yard to a location where it seldom occurs. An absolute dearth of nectar is preferable to this condition. A good fall flow, which enables the bees to store a surplus in August, puts the colonies in fine condition for winter as far as young bees are concerned. The very best wintering usually follows after an August honey flow. We

envy those who are so favorably located as to have every year a good honey flow in August.

It is comforting to know that under any of these conditions the very best thing the beekeeper can do for the welfare of his colonies is to see this month that each colony has the following conditions existing: (1) A young and vigorous queen together with enough workers to be called a colony. (2) An abundance of stores far in excess of the immediate needs of the colony. (3) Room for both this excess of stores and brood-rearing. When these conditions are present during the four or five weeks following about the middle of August in our locality, we may confidently expect to have a colony in good condition for winter.

Much of the so-called winter losses are not winter losses at all but August-September losses. The fact, that colonies which were not supplied with the above three requirements during this critical period do not die until winter, can in no way justify calling it a winter loss. We do not expect to lose during winter colonies that were supplied with these requirements at the right time, and given half a chance to save their energy during the cold weather. In the clover region any deficiencies in these requirements must be supplied in August.

Beekeepers who desire to have all colonies do as well as the best next year must begin now. September is too late to retrieve a situation lost this month.



THE introducing cage shown in Fig. 1, d, was tried out in the Medina home yard last season. Altho virgins as well as laying queens were introduced, every single queen was accepted.

For constructing the cage, procure two blocks $\frac{1}{4} \times \frac{3}{8} \times 1\frac{3}{4}$ inches, and one $\frac{1}{4} \times \frac{3}{8} \times 1$ inch. Place the two longer blocks $\frac{3}{8}$ of an inch apart, and the shorter block $\frac{3}{8}$ of an inch from one of the longer ones, having one end of each of these blocks right in line with each other. Next take rectangular pieces of tin $1\frac{3}{4} \times 1\frac{1}{2}$ inches, from each of which a corner $\frac{7}{8} \times \frac{5}{8}$ inch has been removed. Nail one of these L-shaped tins thru the $\frac{1}{4}$ -inch edges of the blocks, invert and then nail the other tin on the opposite side of the blocks, thus leaving two passageways into the cage, the opening of each passage being $\frac{3}{8} \times \frac{3}{8}$ inch in cross section. Next nail a strip of perforated zinc over the shorter passage on the inner end as shown in the cut (1,e). Wrap and tack with wire cloth, as shown in the illustration, and in-

CAGES OF UNUSUAL MERIT

Device Whereby the Queen is Fully Accepted by the Bees Before Being Liberated

By J. E. Thompson

sert a $\frac{3}{8} \times 1\frac{1}{2} \times 3$ -inch block in the opposite end of the wire cloth.

To introduce the queen, fill the passages or entrances with candy, remove

the large block and put in the queen, with or without bees. If bees are placed with her, they should be only the young ones. If the colony is weak, care will need to be taken that the queen be kept sufficiently warm; and the cage should, therefore, be hung perpendicularly between the frames and brood, after killing the old queen. If the colony is strong, place the cage horizontally between the top bars of the frames so that the cage will not extend over the brood, for if the cage is placed so near the brood that no bee-space intervenes between the brood and the cage, the bees will destroy the brood. In case of a weak colony, it may be necessary to sacrifice a little brood in this way, in order to insure the queen having plenty of warmth, but in strong colonies I always place the cage horizontally. The queen will leave the cage in from 2 to 3 days, but should not be disturbed for as

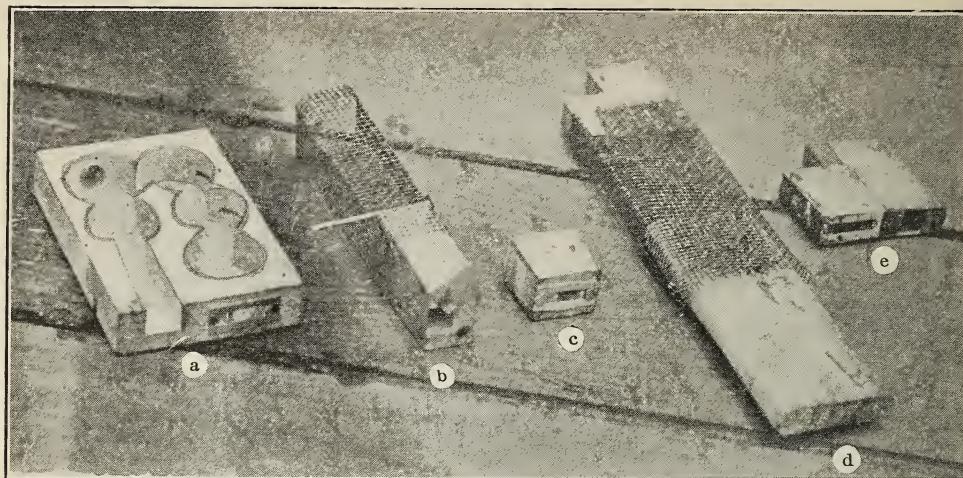


Fig. 1. (a) Mailing and introducing cage. (b) Nursery and introducing cage. (c) Short block of nursery and cage, showing perforated zinc at inner end. (d) Introducing cage. (e) Block showing passage ways at further end of cage d.

much as three days longer, therefore it is well not to open the hive for at least six days after introducing. At that time, if it is found that the queen hasn't destroyed the queen-cells, tear them down, as the queen is apt to be superceded by the virgin if one is allowed to hatch. In such a case the colony may swarm out if strong enough. For laying-worker colonies or for those that have long been queenless, close each end of the long passageway with a slide (a small piece of tin), allowing the bees to enter thru the shorter passage and join the queen. At the expiration of six or eight days, turn the slides and allow the bees to eat thru and release the queen.

To remove a queen from the mailing cage to the introducing cage, get an Alexander bee-veil, rest it perpendicularly on the table, put the cages and hive tool in the veil, then reach inside and draw down the cloth. Pry the wire cloth off the mailing cage, catch the queen and put her in the introducing cage; or, if nervous about catching

her, place the cage over the queen and let her run in. Or, if time is not pressing, put the cages together so that the holes meet, and give a few gentle puffs of smoke, when the queen will cross into the other cage.

The principle of the cage is this: After the bees have eaten the candy thru the short passage, they are allowed access to the queen. The queen is not released on account of a perforated strip, which covers the inner end of the short passageway. Since it is only when the queen is outside of the introducing cage that there is any danger of her being killed, this perforated zinc does away with all danger of the queen being balled. The bees on entering begin feeding her, and thus get acquainted with her before she leaves the cage; therefore the queen is actually introduced before she is on the combs.

The Mailing and Introducing Cage.

The mailing and introducing cage (Fig. 1, a) is on the same principle as the introducing cage, just described. Holes 1, 2, and

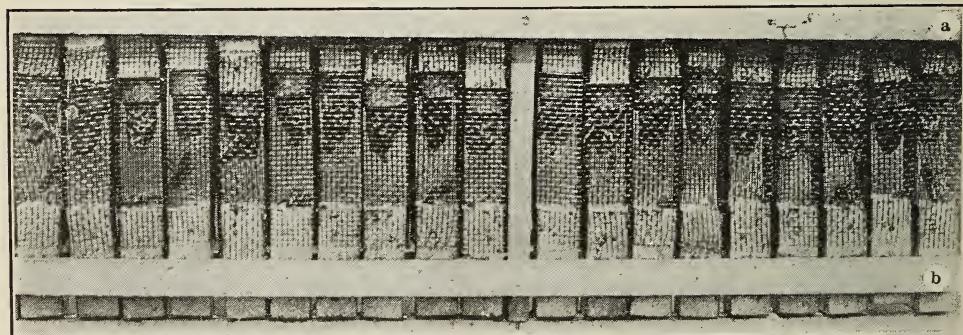


Fig. 2. These nursery and introducing cages are placed in the lower part of the frame, thus leaving the cells in a warm place near the middle of the frame. Bars a and b, mortised and stapled into the end bars hold the cages in place in the frame. The upper half of the frame may be occupied by comb or a piece of board.

groove 4 are filled with candy. Hole 1 and groove 4 the bees eat thru at once. Since the entrance to hole 1 is shorter it is gone thru first, but the queen is confined, on account of a perforated strip at the opening of hole 1. The queen, therefore, has to wait until the candy in groove 4 and hole 2 is eaten thru, which takes a longer time. Holes 1, 2, 3, and groove 4 are covered with paper, and wire cloth covers the whole cage. At first I tried a cylindrical passageway, but it would not work, so I made a groove $\frac{3}{8} \times \frac{3}{8}$ instead. This final form of the cage has been tried out and has proved a success.

Nursery and Introducing Cage.

The nursery and introducing cage (Fig. 1.b) is also on the same principle, but the two blocks are $\frac{5}{8} \times \frac{7}{8}$ to admit queen-cells. The shorter block (1.c) has a $\frac{3}{8}$ -inch cylindrical passage and the longer one a $\frac{3}{8} \times \frac{3}{8}$ -inch groove covered with tin on one side and end. But the longer one may be bored and burnt out so as to give it a smooth surface, otherwise the queen refuses to leave. The nursery cage, when used as an introducing cage,

should always be placed horizontally in the frame above the brood and fastened to the comb with a 5d nail, or else sprung between the bottom bar and the comb. The cage should never be perpendicular, as the queen refuses to leave when the cage is adjusted that way. I have observed that when the cages are put near the top bar, a few fail to hatch, and those that do hatch are sometimes dark, being chilled. Therefore, I place the cages in the lower part of the frame as shown in Fig. 2, there being 20 cages to a frame. The cages are inserted upright between the bottom bar and a middle bar which is placed lengthwise at the center of the frame. The cages are held in place by bars a and b, Fig. 2 (both sides of the frame), which bars fit into mortises cut in the end bars and are there so stapled as to be easily removed. The upper half of the frame may be filled with a board or drawn comb to prevent the building of burr combs there. The cells are thus brought down to the middle of the comb where there is the most heat.



A N ENORMOUS AMOUNT OF HONEY, IN THE AGGREGATE, IS LOST IN THIS COUNTRY EVERY SEASON BY THE HONEY-SHIPPER'S CARELESSNESS IN FAILING TO PROVIDE PROPER SHIPPING EQUIPMENT WHEN PUTTING HIS HONEY CROP ABOARD CARS.

This carelessness, in these times of sugar shortage and food scarcity, is especially reprehensible—almost criminal. It is entirely without excuse, save the excuse of ignorance, and ignorance is never a justifiable excuse. Slackness, laziness, and false economy are unfortunate personal elements among the causes of this honey loss in shipment, for suitable shipping containers and cases can be obtained by any honey-seller anywhere, providing he exercises a little intelligence and diligence.

That the readers of Gleanings might visualize some of this loss in honey shipment, due to poor containers or unfit shipping cases, our photographer got busy the other day in the receiving room of the Airline Honey department of the A. I. Root Co. The accompanying pictures are the result. They were taken from honey shipments in two cars, standing on the same track, at the same time, altho coming from widely different shipping points. The floors of both cars were covered with a mess of honey and dirt, while honey dripped everywhere from cracks in the car floors. What a messy, wasteful, nasty sight it was—and not at all uncommon to any large honey-buyer.

A NEEDLESS LOSS OF HONEY *The Impracticable Round Container and the Old Store Box, Used as a Shipping Case, Cause Great Loss*

By H. H. Root

Let us call our readers' attention to the first two pictures here shown, those of jacketed cans, a kind of honey-container strongly recommended

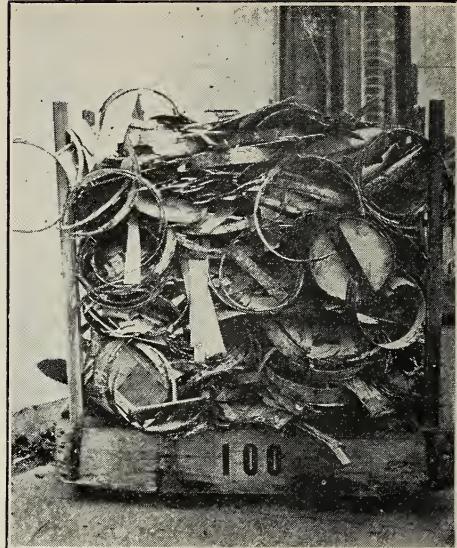
in certain quarters not so long ago. One of the two accompanying illustrations shows the battered and leaky condition of the cans upon their arrival in Medina after long travel; while the other shows a pile of the wooden "jackets" that had been jammed and torn off in the car, illustrating just how little this wooden jacket (really a wood veneer) protects the enclosed round tin can. This shipment originated in Florida, consisting of 40 of these round jacketed cans. When they reached Medina, nearly every can was leaking and several were completely empty, more than 10 per cent of the total honey shipment being lost. In addition to this loss by leakage, there was an additional freight charge of \$7.44 over and above what it would have been if the honey had been contained in square cans and packed in regular shipping cases (which are only strong, tight-fitting wooden boxes). A round can as a container for honey or other liquid has long been condemned as a failure by the railroad companies. This is because of the fact that there is no way of keeping a round container upright and in its place on a car floor, and once tipped over it rolls about with every jolt of the car and gets battered or even knocked to pieces. As for the wooden jacket, about one-eighth of an



Wooden jacketed tin cans at the end of a railroad journey.

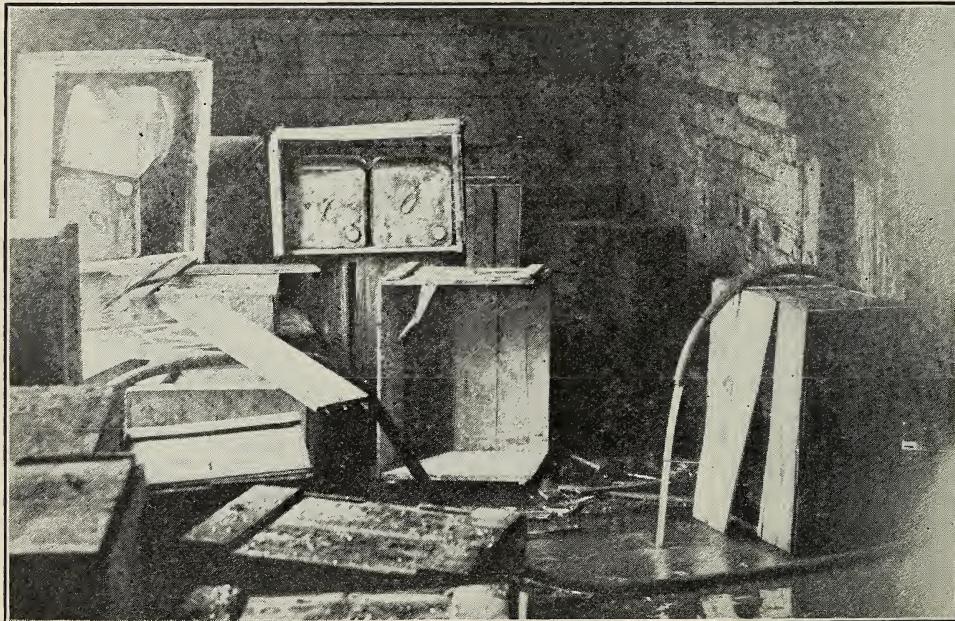
inch thick, it is about as good as nothing.

The second two pictures accompanying this article show the results of using any kind of boxes of any size as shipping cases in which to pack square honey cans. The pictures tell their own story, both of the damage to the cans and of the careless way in which they were packed. This shipment was made up of 49 boxes of extracted honey



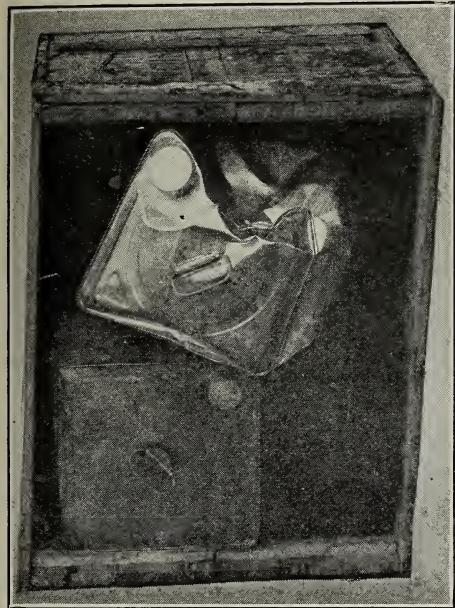
The wooden jackets of round tin cans don't stay on.

in tin, shipped from Chicago to Medina. There was a loss of 600 pounds of honey due to improper packing, to say nothing of the labor cost of clearing up the sticky mess made in the car. Store boxes of various sizes and strength were used as shipping cases in making this shipment. Two cans were packed in each box, regardless of the size of the box, and no effort made to fasten



Result of packing honey cans loose in any kind of old box.

the cans in the boxes. Had this shipment been packed in regular shipping cases (or tight-fitting, home-made, substantial boxes),



A honey can after railroad riding loose in a box.

it would have arrived without the loss of a single pound of honey, as it traveled the entire distance from Chicago to Medina in the same car without transfer or handling.

The last illustration accompanying this

article is that of a correct shipping case containing two honey cans of standard size (60-pound). Honey can be shipped in this case any distance without loss. Such a shipping case is easily made at the beekeeper's home, or any wood-working establishment will make them at small expense. A saw-mill can supply the lumber for them in the right sizes, and the honey-shipper has only to nail this material together to have a perfectly good shipping case that will insure his honey shipment against loss.



Honey cans properly packed in a good shipping case.

AFTER reading the May number of Gleanings, if it were my disposition to go with the majority, and, if I wanted above all things to be in the fashion, it would be my policy to keep quiet. I know many will say: "Theirs not to reason why, theirs but to do and die." But even fashion has not appealed to me, altho that is always fairly easy sailing for the moment.

G. C. Greiner, on page 270, May Gleanings, states: "In a recent number (December, 1917) of one of our bee journals a prominent beekeeper tells of his plan of making increase in September, by dividing his colonies."

I make no claim to being "prominent," but, as far as I know, I am the only one

THE PLAN OF FALL INCREASE

*Advantages Claimed for It, and
Still Another Way to Do It*

By R. F. Holtermann

guilty of having brought before the public this method of making increase. Truth to tell, I felt that I had to muster up my generosity to publish this, as I felt it was a revolution in beekeeping and worth following.

Mr. Greiner states that in his locality he would sooner winter the full colony and divide in the spring early enough to nip all swarming notions in the bud.

Now, I have an ordinary locality, a moderate amount of blossoms for bees to build up in the spring, if the weather is right (which it very often is not), and then no flow after clover, or, possibly a light basswood flow. My colonies are in 12-frame hives and are run not to swarm.

But I have divided even 10-frame hives,

and after the extracting supers have been taken off, the entire front of the hive and space between brood combs and bottom of hive is often filled with bees. These colonies I have split up the first week of September, dividing the bees, combs, honey, and brood down the center of the hive, and next season these have given me 100 pounds or more of white surplus honey. Since first writing on this subject there has been added another severe winter's experience, and I have no reason to change my views.

The advantage I have over Mr. Greiner's method is that I have two queens producing brood all thru the spring where he has only one. I first looked at this proposition with much misgiving and trembling, but some years ago took the plunge and found the water not a bit cold and the swimming excellent. After I got in, I found several other boys had quietly been enjoying the same swimming place—no doubt feeling they had a good place.

Right in that article, Mr. Greiner stated: "Those colonies that fill five spaces or more on a cool morning, when closely clustered, are considered safe for wintering." Why! those I split up in early September covered eight frames and built comb outside of that when they were fed for winter, to which fact I have two student witnesses. Furthermore, running short of material when making them, I gave only five combs and no division-board to one colony in a 12-frame hive, and they wintered well last winter. Remember, I am not advocating splitting of swarmed colonies or swarm colonies or even one which has never had spunk enough to swarm under the treatment that a colony generally gets; but splitting up powerful colonies with plenty of brood in the brood-chamber.

Another Beekeeper's Method.

At the Watertown convention LeRoy C. Keath of Black River, N. Y., gave an address upon the subject of making increase late in the season, or rather making increase after the honey flow had stopped. It now appears that quite a number of beekeepers had been making such increase in a quiet way and "keeping it under their hats."

Mr. Keath's method has the advantage of providing a queen earlier in the season, and not entailing the risk of opening and dividing colonies during robbing time. The plan also permits the beekeeper to know there is a queen present. As to robbing, any good beekeeper should be able to go into an apiary and split up 10 or 15 colonies before the bees begin to get busy. Another advantage with Mr. Keath's method is that the bees do not require to be moved from one apiary or distant location to another, thus making it suitable for a person with only one location.

Mr. Keath during swarming time makes up one-frame nuclei, getting as many of these on hand as he wishes to make increase. The nuclei are made from colonies having

the swarming impulse, this giving him queen-cells reared under the swarming impulse, and taking from the colony wishing to swarm the needed brood and stores. Probably Mr. Keath would not object to giving the bees a comb of honey as well as the brood, thus making them safe for stores. He mentioned that the one-frame nucleus ought to be watched for stores.

When he gets ready for extracting by putting bee-escapes under the supers to be extracted, he puts the bee-escape board on the nucleus which is to be built up, and on this he puts three of these extracting-supers from three different hives—not three supers from one hive. He has an object in taking the supers from three different hives, and that object is to mix the bees so thoroughly that they will not kill the queen belonging to the nucleus below.

Six or seven combs from which the honey has just been extracted are given to the nucleus, and in that way the bees get the necessary comb room.

Mr. Keath stated that he had done this for three years. The first year 39 were made in the above way, and only one was lost during the winter. The next year 40 were made and all wintered well; and in the fall of 1917 there were 25 such placed in winter quarters.

I would warn beginners to be careful about putting the wet extracted combs into a weak nucleus during robbing time. It seems to me it would be better to put these wet combs into the hive after the bees have gone into the brood-chamber.

Of course, only strong stocks can be divided, those that would answer the purpose best being such as would have a good-sized bunch of bees outside of the entrance after the supers have been removed.

These methods of securing increase are a revolution in getting more colonies and are secured without the sacrifice of a pound of white honey. However, winter feed has to be supplied for the increase unless there is a fall flow; and, if that is the case, then it will likely decrease the amount of surplus fall honey from such sources as buckwheat, goldenrod, boneset, and aster.

It might be of interest to give my experience with some 70 colonies split up about Sept. 1 last year. By that splitting-up I had 140 such colonies, weakened in numbers. They wintered just as well as the rest of the bees. I could distinguish them by the division-board in them and by the fact that the hives did not contain 12 combs as did the others. In fact, on Apr. 29 I came across one which had been given only five combs in September. Therefore it is likely that at that time there was less than five combs of bees; and this nucleus, or colony (if you will honor it with that name) wintered in fine shape, and that, too, during a very trying winter.

[The reader should take good note of Mr. Holtermann's comment that only strong colonies are thus to be divided.—Editor.]


 FROM THE FIELD OF EXPERIENCE

CONVERSATIONS with DOOLITTLE

How Best to Store the Honey and Combs After the Harvest

"Please tell us in your department of Gleanings something about storing honey and combs when they are off the hives. I have been keeping bees but a few years and want to fix more permanently for the future."

A good crop of honey may be greatly injured by the treatment it receives when taken off the hives, and while awaiting shipment. On the other hand the treatment may be such that the honey greatly improves.

For a honey-room, the first thing necessary to know is that there is a good foundation under that part selected for the room, and sleepers of suitable strength, so that should we happen to place several tons therein, there will be no danger of breaking down.

Knowing this, the next thing is to make the room mouse-proof. This I would have, let it cost what it would, even if I had to line every inch of it with tin, for the filth from vermin about honey is not to be tolerated at all. Having the room mouse-proof, all that is necessary afterward is to be sure the door is kept shut when not in use.

It is better to locate this room in the southwest corner of the building, and paint the two outside walls, which come next to it, black, or some very dark color, so that the rays of the midday and afternoon sun may be so absorbed as to heat the honey-room as much as possible, as the hotter and drier the honey can be kept when off the hives, the better it will ripen and keep afterward.

There should be two windows in the room, one on the south and one on the west side, which are to be opened on warm, dry days, so as to ventilate thoroughly the room and pile of honey. Over these windows, on the outside, is to be placed wire cloth, so the windows can be left open at pleasure, without any fear from robber-bees. To let the bees out, which may chance to come in on the honey or in any other way, let this wire cloth run eight or ten inches above the tops of the windows, nailing on strips of lath or other strips three-eighths thick, so as to keep the wire cloth out that far from the sides of the building, thus giving space for the bees to crawl up on the cloth to the top when they are on the outside. With me, no robber-bees ever think of trying to get in at this entrance, their efforts being directed toward the open window where the fresh scent of the honey comes, and, by so fixing, the room is kept clear of bees, flies, and insects all the while.* In hanging the door,

do not make the mistake that some do, of having it swing into the honey-room, for, if you do you will regret it some year when you have a bountiful crop of honey, as it will be greatly in the way at such times, and more or less at all times. Let it swing out into the main building, and hang it so that when you wish, it will swing clear around against the side of the room, thus being entirely out of the way.

On either side of the room fix a platform for the supers of honey, which should be at least six inches above the floor. The platform should be built nearly as solid as the floor has been, and should be so arranged that the air can circulate up between and around each super and the combs that are therein. Each super should be separated from its neighbor an inch or so at the bottom, top, and all around, so that the air can circulate all thru and about the honey, thus curing and ripening it thoroughly. Very many fail here, and, after working hard to produce a crop, they let it deteriorate from one to three cents a pound in not properly caring for it after taking it from the hives. And not only that, but such poor honey, generally bought cheaply, injures the market to quite an extent for others. When fixing it, it costs little more to have it so your crop is always growing better, instead of becoming of less value, and after once fixed, the labor required for universally sending off a good article is not so great as it is to fix up that which has partly spoiled after its production. Then you wish your honey stored and piled as above, so that the fumes of burning sulphur, or something of a similar nature, can penetrate the whole pile, should it be necessary to fumigate on account of the larvae of the wax moth being liable to injure it. Don't be afraid of a little extra work or expense in fitting up this room, for on it hangs as much of your success as the producer of fine honey as on any part of the pursuit.

And now about the room or closet for all frames of comb not in use or occupied by the bees. In some convenient place in your building, next to one side thereof, spike on 2 x 4 scantling, just as far apart as the top bars of your frame are long, using as many of these as you think you may ever have use for. Now nail strips of stuff 2½ feet long by five inches wide to these scantlings, letting them stand out into the room in a horizontal position. Let the distance between each strip from top to top be two inches greater than the depth of your frame, so as to give sufficient room to manipulate the

*The door of the room should be on the side nearest the general entrance to the building so as to save as much travel and luging as possible.

FROM THE FIELD OF EXPERIENCE

frames handily. Three inches from the ends of these strips run a partition clear across the space occupied for the purpose of storing these combs, which partition is to have close-fitting narrow doors placed in it, spaced so as to be most convenient. Close up the ends, and see that top, bottom, ends, and sides are as nearly tight as possible, so that in fumigating there shall be as little waste of the gases as may be. Now hang in the combs whenever you have any not occupied by the bees from any reason, and see that all combs, not in use, are in their places, and not scattered about somewhere else to be spoiled in breeding moths to your further detriment or a nuisance of some neighboring apiarist. As often as any signs of worms are found, put in your fumigating gases, close up the room, and the work is done.

G. M. Doolittle.

Borodino, N. Y.

MORE BUSINESS for the HONEYBEE

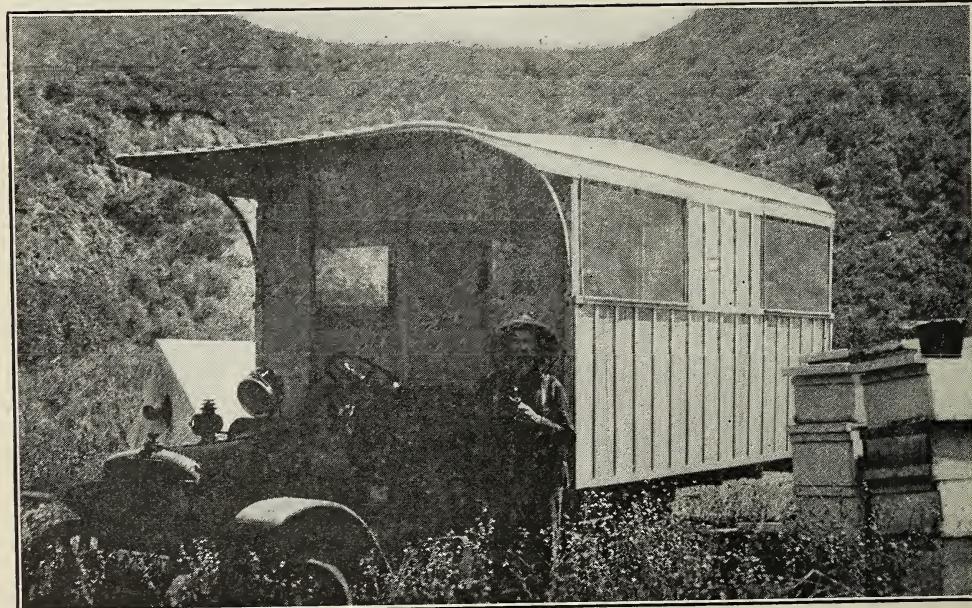
How the Automobile is Used as Conveyance and Extracting-House

A resident in southern California claims that until the motor truck was introduced into the honey business the honeybee did not know what it really was to work. Now this beekeeper has proved that he can almost treble the output of honey, and that until this time the bee has not actually shown what he can do, if given a fair

chance, and this chance has been given to the bee thru the motor truck.

It has been acknowledged, especially by the beekeeper in southern California, where the entire year is practically all warm weather, that the bees cannot do their best work, if they are permitted to remain in one place the year round. As a rule, they feed for a radius of two or three miles about their hives. For this reason they either do a lot of unnecessary work of going over flowers that have been already "drained," or they cultivate the habit of lying around idle a great deal of the time, which is anything but desirable.

Heretofore, the beekeepers have experimented in moving bees and doing the work by the means of horses and wagons, and even by freight, but the jolting wagons broke down the comb construction in the hives. The long confinement while the journey was in progress always killed a large number of the bees and thereby weakened the colonies. L. E. Mercer of Castaic, Calif., has demonstrated, however, that the method of bee transportation from place to place, to take advantage of the blossoming seasons in the different sections, may be done by the aid of the motor truck very successfully. Mr. Mercer equipped a ton-and-a-half truck chassis with a special house or body for it. In early spring he conveys his hives by motor truck from their home ranch in Castaic canyon to the foothills just above Glendora, Calif., a distance of about 64 miles, where there are hundreds of acres of orange



Here is an automobile extracting-house.

FROM THE FIELD OF EXPERIENCE

groves, the blossoms of which make splendid pasture for the bees. When the honey season at Glendora is ended the bees are transported to the Ventura district, where they are permitted to remain throughout the summer, when the thousands of acres of bean blossoms are available. After the bean-blossom season is closed the bees are returned to the home ranch in Castaic canyon, where they gather honey during the winter from the blossoms of the sagebrush on the mountain side.

The method of transporting the bees is very interesting. By the aid of the truck the moving of the bees is carried on with remarkable speed and without the loss of a single bee. After the bees have done their day's work and have retired for the night, the owner carefully closes the entrances to the hives and places them gently within the truck, each load consisting of about 100 hives. The transporting is done at night, so that while the bees go to bed at Castaic they wake up the following morning in



A view inside of the automobile extracting-house.

Glendora. As it is a smooth road all of the way, the bees, hives and combs are in no way damaged by the trip. In three nights the entire apiary is moved from one place to another.

The motor truck is not only used as a means of transportation from place to place, but it serves as an extracting-house. The room is equipped with a power honey-extractor, driven by a gasoline engine. By having the truck equipped in this manner it is not necessary to move the hives when they are heavy with honey, but before each moving process the honey is extracted and shipped from the nearest railroad station. The extracting-house may be backed right up to the hives so that it is always ready and convenient. The screen around its open sides protects the workman from the bees while extracting.

It has been definitely learned that after a winter in the hills the colonies of bees

grow stronger with the early pasture that the orange blossoms afford, so that instead of becoming run down in health on account of the additional work, the bees, because of having a richer pasture, are always kept in full strength. Altho of better quality the sagebrush honey is a great deal harder to gather, and it has been found that bees do much better work in the sagebrush after they have had a season in the orange or bean blossoms, than they did when they were kept constantly in the canyon.

Before the motor truck made it possible to transport the bees from place to place, eight tons of honey were secured from these 270 stands of bees. Now in addition to getting almost this amount of sagebrush honey, the owner secures from five to six tons of orange-blossom honey and between nine and ten of bean-blossom honey, which shows that the truck has been a good investment. When it is considered that last year honey sold for 12 cents a pound wholesale, it will be seen that this new method of handling bees is certainly a great success.

ABOUT BREEDING BEES

Best Results Secured by Rearing All Queens from the Best Breeder

I should like to say a few words about breeding bees. I wrote an article on this subject years ago, but it was so near like one written by E. S. Miles that I did not submit it for publication.

In selecting our breeders it is not always safe to breed from your best, as I have found some of these to be poor to breed from; and a man who sends out a queen that has not been tested for breeding as a breeder is dishonest. It is not enough that she produce finely marked bees and lots of honey. Her daughters must be good and uniformly consistent honey-producers. Of course, the breeder's drones are selected stock and bring better results in the mating of said queens.

My best results in the past 15 years have been achieved by rearing all queens from my best breeder. I select for drone-mothers the best of these as to honey production and other characteristics—of course, mating these drones with queens from said breeder. This brings our breeding queens up to two or three years old, and the most of these live to be four years old. I was surprised that some one did not challenge Mr. Miles on the statement that rearing queens (Italians) from black or hybrid stock has an influence on said queens as to color and other things. I prefer a hybrid colony, if I happen to have one, for the reason that it raises larger cells and more of them; and I challenge any one to prove that there is any

FROM THE FIELD OF EXPERIENCE

taint in so doing, any more than a lamb raised on goat's milk would be influenced by it, changing it to part goat. Again, queens do mate more than once, but never if fertilized at the first mating. And here is another thing: they mate the second time (or have done so every time for me) just three days from the first mating.

In closing let me say: breed from your best breeder; if not, then from your best queen, for thus you will be gaining; but faster and more surely by breeding from the best breeder.

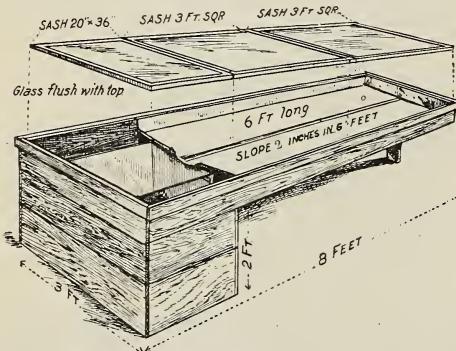
Geo. B. Howe.

Black River, N. Y.

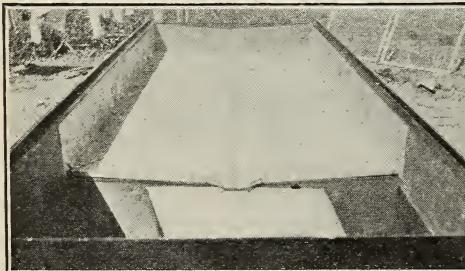
A V-SHAPED SUN EXTRACTOR

One That is Bee-proof and also Practically Air-tight

In the past I have experimented a good deal on different kinds of sun extractors. First I made the flat kind so commonly used. Then I made a curving dip at the center,



with three different degrees of slope, which extractor worked better than the flat one; but still it was not just what I wanted. Next I made the V-shaped sun extractor. First the V had too great an angle, then it

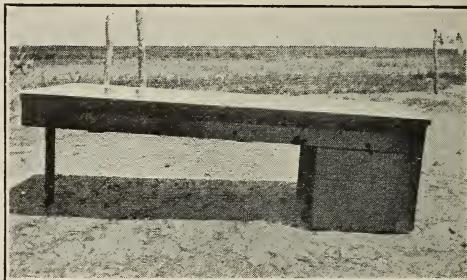


View showing the melting surface.

was not enough. Finally I made the one shown in the illustrations.

These sun extractors can be made in any size. The one I have now is 3 x 8 x 2 feet, inside measurement. The two larger glasses

are 3 feet square, and the smaller one is 20 x 36 inches. The glass frames I made lighter than the real frames. The glass windows are flush with the top of the railing. The galvanized-bottom melting surface is 3 x 6 feet, each half being 1½ feet to center,



Exterior view of the Sun Extractor.

and soldered down where the lapping takes place. This V-shaped sun extractor has a one-inch slope to three feet, as can be seen in the drawing. It is important to have the slope just right. Too much slope spoils the pudding, and not enough is nearly useless.

I use a wax-pan holding 25 pounds of wax. This pan needs no separator, and leaves all of the dirt after the honey and wax have left it. I always keep a two or three-inch channel open for the honey and wax to run down to the wax-pan.

This kind of sun wax-extractor has a double slope to the melting (running) surface, there being an inward slope to the channel and the longitudinal two-inch slope to the wax-pan. No screen nor cheese-cloth is used.

I do not believe in long narrow strips of glass, such as I have seen some use, as it results in too much wasted heat, and attracts too many bees. My sun extractor is bee-proof and nearly air-tight. If a sun extractor is made right, your worry is at an end; but if not, do not keep it in a foul brood apiary.

F. J. Severin.

Imperial, Cal.

PREFERS SUPERSEDURE QUEENS

Why Old Queens Secure a Much Superior Breeding Stock

Last year there appeared in Gleanings an important article by J. W. Nichols in which he stated that one of his queens was at her best when eight years old. I believe that this is the only kind of queens to keep for breeders, if a long-lived stock of bees is ever to be secured. How can such a strain be produced, if all queens are replaced each year? Or why replace a queen capable of supplying several millions of eggs when she

FROM THE FIELD OF EXPERIENCE

has laid only a small fraction of the possible number?

While it may be true that old queens are more inclined to swarm, I have never had to replace more than one for not keeping the colony up to the average size, and she supplied a small apiary with superior drones for an entire summer when they were absent from all the other colonies. This, by enabling me to extend queen-rearing, was worth many times the honey ever produced by a single colony. By breeding these old queens year after year, I keep a stock of goldens that surpasses all the dark strains I have ever seen.

It is not only to secure superior breeding stock in both queens and drones, nor to avoid the fussy work of annual requeening, that I keep old queens. My main reason is that the young queens that supersede these old ones produce so much hardier a strain of bees than do the queens reared artificially. I would even be content to have a few colonies swarm, or even produce a smaller crop for one year, since these strong supersedequeens produce so many long-lived winter-surviving workers that they make up the loss the following summer. This supersede stock is all those eight-year queens come from.

L. E. Kerr.

Fort Smith, Ark.

WHAT A GROCER DID

He Got Honey so Fast that He Had to Hurry up with a Wheelbarrow

As a suitable side line for the grocery business, I decided to try beekeeping. Therefore in the fall of 1916 I bought 52 colonies of fine Italian bees, with young queens. They all wintered so well that I did not lose a single colony. About Apr. 15, I put them on their summer stands in an orchard, bought expressly for the bees, the orchard containing 75 apple trees and a great number of raspberry bushes. When the young queens began laying I took a record of every hive, helping the weak ones as soon as I could get brood from the strong ones. I examined each hive once a week, forestalling swarming, so that when the honey flow came they were all in pretty good condition and but four or five swarmed.

The honey flow lasted only 15 days. When I first removed two full supers of honey at a time I thought that was pretty good, but later on I had to take away honey so fast that I was obliged to use a wheelbarrow and remove five supers at a time. From the 52 hives I got 3,800 pounds of white clover honey. I took some to the Minnesota State Fair and received second premium on the extracted, and also on ten frames of nice white clover honey that was not extracted.

This honey I disposed of in the store and

it sold very rapidly. Whenever the glasses of honey became a little candied I put them on top of the radiator. In about five hours the honey was as clear as if I had just extracted it.

Last spring I sold two colonies to a woman, who made one colony increase and got \$23.00 worth of honey. How is that for two hives of bees?

Paul Knechtges.

St. Paul, Minn.



A PRIZE WINNER

Tells Some of His Experiences and Pleasures as a Beekeeper

In the spring of 1873, when I was just a boy, my father, for the sum of \$100, purchased 10 colonies in eight-frame Langstroth hives. That season he divided them into 30 good colonies. The next season, he sent to Italy for pure-bred queens. We increased that year to 100 colonies, and the next year to about 300, both seasons extracting some honey.

The next season the bees contracted the swarming fever. Some queens were clipped, and some were not; some swarms were in the air, and some in the trees. We returned all the swarms possible to the original hives, killing the old queens and destroying the queen-cells. We knew nothing about supers, but extracted all the honey there was in the hives. It was the busiest summer I have ever put in. I think I must have traveled 1,000 miles or more that summer. Father shook and brushed the bees off the frames that he took out to extract, and I carried them to the honey-house and returned the empties. (How I should love to live it over again with father there! and how we would "deck 'em" up!) Well, we slung out a fine lot of honey—ten big barrels and some comb honey besides. We had a big crop of white and alsike clover, then basswood, winding up in the fall with what some one told us afterward was honeydew, gathered from the leaves of hickory trees. That winter nearly all of the bees died; and, altho I have always kept bees since, I have never seemed to get a good start.

Two years ago I woke up after dreaming that there were tons of honey going to waste in my locality, since there are hundreds of acres of white and alsike clover, also sweet clover in abundance, with only two beemen near. In the spring of 1917 I started with 60 ordinary colonies, and obtained 3,000 pounds of extracted and some comb honey. I also won the prize at the Wisconsin State Fair for the largest amount of extracted honey from one colony, producing 210 pounds (see Mr. France's report in the March issue). Most of the crop I sold at 15 cents a pound. Fred Alger.

Waukau, Wis.

D OOLITTLE is mentioned, page 397, July Gleanings, as "the first man to demonstrate that queens can be reared in an upper story with a laying queen below." G. M. Doolittle is the man who deserves credit for making practical use of it, and bringing it into prominence, but he never claimed to be the man who first discovered that a queen might be reared over a colony with a laying queen. In "Doolittle on Queen-rearing," page 93, edition of 1889, he says:

"At about this time, I saw in some of the bee papers, that, by accident, a queen had become fertilized, in an upper story of a hive worked for extracted honey, the same having a laying queen below, with a queen-excluding honey-board between the upper and lower story, the queen having gone out to meet the drone thru an opening which had been left between the upper hive and the queen-excluder. I was not long in seeing where my hobby might now be brought to the desired consummation, so I began experimenting."

That first case of "accident" Doolittle has evidently mixed a little with things that were done afterward, and as a matter of history it may be well to tell how the first case on record happened. It was this way: A beekeeper had on hand a number of empty brood-combs that he wanted to put in the care of bees, to prevent the ravages of the bee moth. He piled them up several stories high over a hive with a laying queen. Feeling afraid that the bees might not pay much attention to the uppermost combs, he put in the upper story a comb of brood. No excluder was used; merely the frame of brood was a long way from the queen. No attention was paid to the pile for some weeks, when he was greatly surprised to find a nice brood-nest in the upper story, and a queen with whole wings busy laying. No opening had been intentionally left thru which the queen might go on her wedding-trip; that was another accident. That beekeeper deserves no special credit for his discovery—he couldn't help himself—but when he published it Doolittle, with his keen perceptions, put it into practical use.

* * *

Editor Townsend has in The Domestic Beekeeper a department that is rich in information, in which he answers questions about his own practice in beekeeping. From the June number I cull the following:

"Mr. Townsend was successful in producing extracted honey without excluders, the plan being to add empty supers on top, the theory being to keep the queen below by so doing. But it is a mistake to give surplus room enough to hold the brood the colo-

STRAY STRAWS

Dr. C. C. Miller

ny would naturally rear, and also room for the surplus honey. You must give only room for the surplus honey, 'forcing the queen below,' especially

toward the close of the season,'

"We used to paper our inside-wintered bees during the spring, but do not any more, and as far as we can see we get just the same results. Mr. S. D. Chapman, Mancelona, Mich., papered every other colony in one of his yards one spring, and he could not see any difference in honey secured between those papered and those not papered."

* * *

Irving Kenyon, according to a report in The American Bee Journal, page 205, June, has suffered from a peculiar trouble, the honey fermenting in the cells and often bursting the cappings, being decidedly sour. He thought it might be due to a microbe within the hives, perpetuating itself from year to year, and finally resorted to the extreme remedy of shaking all his bees upon sheets of foundation in the spring and melting up the old combs into wax, the same as in treating American foul brood. Mr. Kenyon says: "I don't pretend to know the cause of this trouble, but after 15 years' experience with it I am well satisfied that it is contagious and is spread by robbing. Not having a single colony that did not show it in 1916, in 1917, after shaking, I saw it in less than one-fourth of one per cent of the honey. I expect to shake again this season, and think that will clean it out entirely."

In June Domestic Beekeeper, page 170, honey is reported as going wrong in much the same way, and Editor Townsend ventures the guess that there is a fungus in nectar (similar to other sweets of same consistency), which is usually forced out of the nectar in the process of evaporating. He thinks it may be the fault of the season—a cold period during the honey flow—and that some colonies may have more of the trouble than others, in which case a change of queens might be advisable.

* * *

Last winter I contracted a cough that was exceedingly persistent, and for a time I was a bit anxious lest it get the better of me. After taking a good deal of the stuff the doctor prescribed, and I should add after partly overcoming the cough, I substituted for other medicine candied extracted honey. I'd take a chunk perhaps the size of a black walnut, put it in my cheek, and let it slowly dissolve there. The result was very satisfactory. I'm not ready to say that honey is better than a good cough medicine prescribed by a capable physician, but I'm sure

it is a help to take it each time there is an inclination to cough, and it may be worth while to give it a fair trial. Pretty much all cough medicines have in them either some preparation of opium or else something to nauseate you, and too much of that sort of thing is not so very desirable. Just possibly, in a good many cases, honey may do the business without the things objectionable.

* * *

The views of Jay Smith and Mel Pritchard, page 406, and of Mrs. Allen, page 414, as to the behavior of queens, are interesting. It's a little hard to believe that queens and workers are not both governed by the same rules. I've had an idea that in locating a hive they were governed by form rather than color. Yet a good many times I have seen bees flying in front of their hives in a confused way, as if having a playspell or preparing to swarm, and only because the entrance, all the rest of the day in the shade, was for a few minutes in the sun. That looks as if they paid attention to color. Here's pretty strong evidence that form is the chief thing: Let hives be placed in a straight row six feet or more apart, with no trees or other objects to help mark location, and there is some danger of getting into wrong hives. Let two nuclei be in the same hive, with a front entrance divided between them, and there is no danger as to confusion of the entrances. They are safer at six inches apart than are the entrances six feet apart in the straight row of hives, because the bees go by form, and don't mistake right for left, or vice versa. Mrs. Allen, I don't know for sure, but I've some idea that a young queen takes its first flight on the first day it marks its location, and also does some marking each time it takes a flight. Like you, I have been careful not to change the place of a young queen from four to eight days old, "lest I muddle her geography with disastrous results."

* * *

J. E. Crane, you say, page 411, that you have no fall flow from which to secure combs of sealed honey for spring feeding, and, if you secure such combs, it must be by the middle of July to the first of August. Well, such combs will answer very well; but since you prefer to use sugar, seeing it's you, I give you my permission to do so. At the same time, I wonder whether in the long run it may not be cheaper to use the early honey. Isn't it just possible that the vitamines and minerals found in honey, and not at all in sugar, may give such stamina to the bees as to make them store enough extra to make up the difference and more?

* * *

"Helpmeet," page 400, speaking of combs of brood piled up eight stories high, says: "Later, after considerable of this brood has emerged, some of the hive bodies are slipped forward or back to allow additional entrances." I hardly think "Help-

meet" means that these openings are used by the bees as places of exit or entrance, but valuable for ventilation. In about all of my beekeeping life it has been my practice to make openings for ventilation at one or more points above the brood-chamber, and it is a curious fact that in not one case out of a hundred do the bees use these openings for entrances, no matter how convenient it might seem. Having established an entrance at a particular place, they seem to think that one entrance is enough.

* * *

Bees by parcel post! That's a big thing for short distances, and possibly for long. How will it compare as to the matter of cost with sending by express from the South? [In the fifth zone for instance, the parcels post is cheaper up to 15 pounds—very much cheaper on small packages; over 15 pounds, express is cheaper. In the fourth zone, the advantage lies with parcels post up to 25 pounds, and this advantage is still greater in the first, second, and third zones. The nearer the zone, the cheaper is parcels post as compared with express, and vice versa.—Editor.]

* * *

Poor Bud Tomlinson! page 402. He's not likely again to want to carry honey in his trunk, but if he should want to do so, I can tell him how I did it, simply doing it up in paper, just like so much dry sugar. I laid the vessel of candied honey on its side and left it till all the liquid had drained out. Then I did it up in paper and put it in my trunk. But it will not work with all honey. Some honey of fine grain cannot be thus drained; it will either all run out or else not at all.

* * *

G. M. Doolittle was one of a thousand among beekeepers; a clear thinker, a careful experimenter, a successful beekeeper, and a lucid writer. But more than all this was the character of the man as a man, always standing for what he believed to be right and true, no matter whether it was popular or unpopular. A good man has gone to his reward.

* * *

When a colony has queen-cells after swarming, you say on page 427, "If one desires to improve the strain, all these cells may be torn out and another queen introduced or a capped cell (in a protector) given them." Is there really any need of the protector?

* * *

"It is admitted by our best beekeepers that bees, even during a severe winter, will do better on sugar stores," page 394. Isn't there a sort of all-inclusiveness about that that is hardly warranted? Don't some prefer good honey?

* * *

Our bad drought was at last broken by a pretty good rain June 30, in time, let us hope, to save from drying up the bounteous spread of white clover.

W H I L E we lover came into bloom unusually early this year, it was of little value to bees until the 25th of June, owing to cold, rainy weather. On the 25th the clouds gave way to warm, sunny days, and within 24 hours the yards of bees were all bustle and activity and good colonies beginning to work in supers. Doesn't it make one feel good?

* * *

Pictures are certainly instructive, and that on page 398 illustrating the results of extracting unripe honey is no exception. My! I can almost taste it, just looking at those dauby cans, and smell it too.

* * *

To be able to predict with some degree of certainty just how long the flow of nectar from any given source will last, is of considerable value; but with many years' experience we find it is not always an easy thing to do. A cold rain or sudden drouth or bad atmospheric conditions may upset our best predictions.

* * *

I was surprised to learn thru the July number of Gleanings of the death of our friend, and everybody's friend, G. M. Doolittle. How fast the old writers in Gleanings, that we had come to admire and love, are passing away! For one, thanks to the light of a glorious Gospel, I am grateful that I do not have to think of him as having gone out into darkness, but rather as having passed on into a freer life, where all the nobler longings and aspirations of his soul may be realized.

* * *

In the Editor's comments on "Apiaries at Long Range" he says, "European foul brood with a good strain of Italians can be and is being controlled so that it is not a serious menace in most cases." This statement is a fact that I wish more beekeepers could realize and appreciate. Hives of black bees that I found in my inspection work last year, badly infected with European foul brood, and gave directions to either Italianize or destroy, I have found this year filled with beautiful Italians and free of disease. But let us not think that Italian bees are a sure cure, for we occasionally find some of the brightest Italians subject to disease. Such, in spite of their beauty, should be treated the same as blacks.

* * *

For one I am glad Grace Allen is intending again to try packed hives another winter, after her unfortunate experience of last winter. I have begun to think there are more kinks to wintering bees than the wisest have dreamed. It is something of

SIFTINGS

J. E. Crane

an eye-opener to inspect bees after such a winter as the past one has been. I confess it has knocked a good deal of conceit out of me, when I found some

colonies that according to all orthodox rules should have died, alive and strong, and others that should have lived, dead as a door nail. That hive bottom side up that Mrs. Allen speaks of, page 415, is a fair sample. I found one single-walled hive on a bench three feet above ground exposed on all sides, with a hole in one side six by eight inches, and yet it survived in spite of all our zero weather. Sometimes I think I don't know; and then again, I think, with plenty of stores and enough young bees, some of the things we have thought so essential could be dispensed with.

* * *

The old-time school-teachers of the country districts used to mix bits of truth with the copies they set for their young pupils to learn the art of writing. A favorite was:

"Many men of many minds,
Many birds of many kinds,
Many fishes in the sea,
Many men that don't agree."

I have thought of it many times these later years. It is as true today as in the days long ago—as true of beekeepers and beekeeping as in the world of politics and religion.

When I wrote some time ago that shallow extracting-frames were a nuisance, I wrote from my own experience and method of management; and I can hardly regret it, for it has brought out many nice things said in favor of the shallow frames that otherwise we might have missed.

For various reasons I prefer an extracting-frame that is interchangeable with the frames of the brood-chamber.

Our seasons are very short and often a colony lacks five or ten or more pounds of winter stores that can readily be supplied from super combs. Also for spring feeding, frames of honey from a super is a most convenient way of feeding. Where two shallow extracting-supers are used for a brood-chamber, as some beekeepers are doing with excellent results, of course, shallow extracting-supers would be preferable. I am not sure but that such hives have more advantages and can be managed with less time and labor than any other, but I have not tested them out, and can not speak from experience.

I have no difficulty in getting bees to work in supers with full-depth Langstroth frames, and prefer them; but if any one can secure better results by using shallow frames, by all means use these.

FOR years there has been no molasses in the Puerden pantry. When I wished to test a recipe calling for molasses I pried off the top of my ten-pound honey pail, which always occupies a prominent position in my pantry, measured out the amount of molasses called for in thick, golden honey, and compounded my recipe to my own satisfaction and that of my family. Of course I always adjusted the amount of soda to suit the change in the recipe.

But recently I have been working out conservation recipes for a local publication, as there has been such a demand for wheat-substitute recipes, and with the price of honey what it now is, I decided to order molasses for experimenting on those recipes. I therefore asked my grocer to send me the best molasses he had in stock. If what he sent me is the best, I wonder what the worst would be. I tried it first in a barley-flour spice cake. The cake was quite spicy and contained a cup of fruit, but when I tasted it I thought my barley flour must have been kept too long. There was a strong and disagreeable flavor to the cake.

I next used some of the molasses in a steamed cornmeal and barley-flour bread, a recipe for which appeared in this department for June. The Puerden family are fond of that particular kind of brown bread, and we use it very often to save wheat. But that made with molasses, altho it was soft and looked tempting, had a flavor that was pronounced and unpleasant. The next time I made that brown bread the head of the Puerden family looked at it suspiciously and inquired if there was any molasses in it. He did not want to even taste it if there was.

You may think this is a case of prejudice on the part of a beekeeper's family, but I find other housekeepers have had the same experience. I have gone about the country a number of times in the past few months, giving informal talks in the interests of food conservation, with demonstrations of wheatless foods. In several cases, when I have been giving recipes calling for molasses, housekeepers have said:

"What can we use in place of molasses? We do not like the molasses nowadays."

The fact of the matter is, molasses is not what it used to be. As made at present, there is very little sugar left in it. Modern methods of refining sugar tend to remove more and more of the sucrose from the remaining molasses, and the molasses itself is so concentrated that the resulting product is altogether too strong in flavor to be attractive as a human food. And

OUR FOOD PAGE

Stancy Puerden



many dietitians question its wholesomeness, as now made.

Dr. Harvey W. Wiley says, "I regret to say that in so far as I know the domestic molasses

on sale in this country is practically saturated with sulfur dioxide and is, in my opinion, not wholesome. * * 'Karo' contains no sulfur fumes."

Southerners have told me I should taste the old-fashioned kettle-rendered cane syrup, which is the pure juice of the cane boiled down, nothing added to it and nothing taken from it. I believe this may still be obtained in certain localities in the South.

If you have ever travelled in a country where there is sugar cane, you have probably seen the natives chewing a section of the cane as the Northerners eat candy. No doubt we should all be better off if we ate our sugar more nearly as nature gives it to us, instead of the refined, concentrated, granulated sugar, deprived of its valuable soluble minerals in the process of manufacture. A recent medical journal goes so far as to call granulated sugar "a vampire which robs the human system of the valuable minerals which it lacks itself." The danger arising from a large proportion of refined sugar in the diet is not because it contains anything harmful but because of its lack of constituents essential to the building and maintenance of the tissues.

Now, we beekeepers pride ourselves on the fact that honey is nature's own and only concentrated sweet, the only sweet known to antiquity, and that it has not been robbed by man of its valuable soluble minerals, that it contains the class of vitamins known as "water soluble B," that it is partially predigested, and that its aroma is the fragrance of the flowers.

But, and this is an almost insurmountable "but" to me, how are we going to induce the public to give to honey its rightful place in the daily diet at its present price? Before the war I had been hoping that the time was coming soon when Americans would appreciate honey as much as Europeans do. From my standpoint, it looks as if we were now educating Americans to believe that honey is a luxury, something quite beyond the means of the ordinary family. When this unprecedented demand for honey to be shipped abroad stops, where will our honey market be?

I am going to say something else, even if I have a husband who has several small bee yards. I cannot endure to think that beekeepers are among those who are making excessive profits because of this terrible war. Don't misunderstand me. I believe honey should be higher in price than sugar for the reason that it is a better food. But,

going out among people as I have the past few months, talking with them on food questions, I cannot help seeing that there is a good deal of this spirit, as shown in the following question:

"Why should we farmers be expected to raise and sell wheat at the price we do, when the price of some other foods, such as honey, has gone so high?"

You see farmers are asked to increase their production of wheat to the utmost, but the price of wheat has been fixed, and the price of sugar has been fixed, while the price of honey has gone beyond anything ever before known. If the whole world were not so much in need of sweet at the present time, I should not feel as I do about this matter, but it hurts my pride to have the patriotism of beekeepers questioned.

There, I have said a part of what has been on my mind for some time. Perhaps it might be well to mention that this was written without consulting the editorial staff in general.

* * *

Many housekeepers do not realize that none of the substitute flours have the keeping qualities of white wheat flour. They should be ordered only in small amounts. I believe much of the prejudice against barley flour is because housekeepers order it, put it away and forget it, and then, when they finally do use it, they complain that it has a strong flavor. While it has a flavor quite different from that of wheat, many have learned to like it who did not like it at first. It is especially good in spice cakes, chocolate cakes and cookies, as it is soft and fine and more like wheat flour in texture than any of the other substitute flours.

Notice among the recipes I am giving a rice-flour sponge cake which calls for six eggs instead of four. This is a cake which I make only for special occasions. It is as light and fine grained as an angel food cake and just as attractive looking. Also, it can be baked the day before it is needed, being tender and moist when one or two days old. When one can make such delicious cakes without any wheat flour, there is not the slightest excuse for using it, even for wedding cakes.

Don't fail to try that wheatless, sugarless, raisin pie. It is the best substitute piecrust I have tried yet, and the filling of honey and raisins is ambrosia itself. The color of the crust is a trifle dark, but when you have taken one bite I will venture to assert you will think no more of its complexion.

Please don't accuse me of inconsistency in giving a recipe for marmalade made with honey, after complaining of the high price of honey. You see that high-priced honey will go farther if you mix fruit with it.

VICTORY BREAD WITH BOILED RICE.

1 cup rice	$\frac{1}{2}$ cake dry yeast softened in
2 $\frac{1}{2}$ cups water	$\frac{1}{4}$ cup warm water
1 tablespoon sugar	about 6 $\frac{1}{2}$ cups flour
2 teaspoons salt	

Cook the rice in the 2 $\frac{1}{2}$ cups water in a double boiler until the water is all absorbed, add the sugar, the salt, the yeast softened in the $\frac{1}{4}$ cup warm water and enough flour to make a stiff sponge, about 2 $\frac{1}{2}$ cups. Beat this sponge well, cover and keep in a warm place over night or about ten hours. In the morning add about four more cups flour, enough to make a dough, and knead until smooth. When light, divide into two loaves and let rise again. When light, bake in a moderate oven. In warm weather it may be advisable to add $\frac{1}{2}$ teaspoon soda with the flour in the morning.

OATMEAL DROP COOKIES.

(Adapted from Airline Honey Book.)

1 cup honey	1 tablespoon cocoa
1 cup sour cream	1 teaspoon cinnamon
2 eggs	$\frac{1}{4}$ teaspoon cloves
2 cups rolled oats	$\frac{1}{2}$ teaspoon nutmeg
2 $\frac{1}{4}$ cups barley flour	$\frac{1}{2}$ teaspoon salt
1 teaspoon soda	1 cup chopped raisins
1 teaspoon baking pow-	$\frac{1}{2}$ cup sliced citron
der	

Blend the honey with the sour cream, add the beaten eggs, the rolled oats, and the other dry ingredients sifted together. Add the fruit, beat well and drop by the teaspoonful on a well oiled pan. Bake in a moderate oven. They may be baked in muffin pans.

COCOA DROP COOKIES.

3 tablespoons shortening	4 teaspoons baking powder
1 cup honey	$\frac{1}{3}$ cup cocoa
$\frac{1}{4}$ cup milk	$\frac{1}{8}$ teaspoon salt
1 egg	1 teaspoon vanilla
About 1 cup barley flour	chopped nuts
$\frac{3}{4}$ cup Cream of Maize	

Cream the sugar and shortening, beat in the egg, add the milk and then the dry ingredients in which the baking powder has been mixed. In this recipe, measure the barley flour before sifting. The Cream of Maize may be omitted and half a cup more barley flour used instead, if preferred. Drop from a teaspoon on a well oiled tin, sprinkle the chopped nuts over and bake in a moderate oven. They may be baked in muffin pans, if preferred.

RICE FLOUR SPONGE CAKE DE LUXE.

1 cup sugar	2 tablespoons lemon juice
6 eggs	$\frac{1}{8}$ teaspoon salt
$\frac{3}{4}$ cup rice flour	

Separate the whites and yolks of the eggs and beat the yolks until thick and light colored; sift in the sugar, beat until smooth and creamy, beat in the lemon juice, and then carefully fold in the stiffly beaten egg whites before beating. Last of all, fold in the rice flour, measured before sifting, a little at a time, put in a sponge cake pan and bake in a slow oven about 45 minutes.

WHEATLESS, SUGARLESS, RAISIN PIE CRUST.

1 cup barley flour	1 teaspoon salt
1 cup cold mashed potato	$\frac{1}{2}$ teaspoon baking powder
$\frac{1}{4}$ cup shortening	cold water

Mix the flour, potato, salt, and baking powder and cut in the shortening with two knives. Roll out the lower crust, cut in four

(Continued on Advertising Pages.)

BETTER be a side-line beekeeper than a main-liner, when honey-producers are saying, as they are in middle Tennessee in this month of July, 1918, "Our fair hopes all went glimmering." I don't know just exactly what fair hopes do or where they go, when they go glimmering, but I do know there's not going to be as much honey as we had expected. Extracting is not yet completed, but some beekeepers around here say they won't have any honey at all to take off. One Williamson County producer looks for about a 40-pound average from his producing hives. But they won't all produce.

The prospects were unusually bright this spring, tho I regretted seeing clover come so early, as many bees were not ready for it. But it brought good promise with it—there seemed to be a wealth of it, the the distribution was not even—but alas it did not fulfill the promise. No two beekeepers offer the same explanation. "Too much rain in the spring washed out all the nectar," one says; "so little rain this summer, it sort of dried up," says another; "there just wasn't any nectar," still another asserts. Personally, I don't know—tho I do know we are disappointed—again. And I do know, too, that Dr. Phillips says the nectar secretion of white clover is "quickly affected by adverse weather conditions." And we've had all kinds of weather conditions, adverse and all. The present dry spell has lasted so long it has become a real drought, and now, without rain, we have passed from very hot to very cool.

* * *

This year, as I have used far more shallow supers than ever before, I feel justified in adding an opinion to the many others that have been expressed pro and con. I like them very much better than the full depth. Just because they are lighter to lift off, you will say. That is a very important reason, and the one that prompted their purchase in the first place, but it is by no means the only reason. In a locality like this, where there are not often heavy crops, the shallow supers are particularly valuable. The clover honey, even tho only a small crop, will be safely sealed over before bitterweed comes on or honeydew puts in its appearance. And if the season is good, you have only to tier them up. They make more combs to uncap at extracting time, true, but the uncapping is easier, comb for comb.

And as Miss Fowls once cleverly suggested, if one is quite too proudly strong to be willing to lose the opportunity that the full-depth supers afford to display his strength, let him insert his tool under two of the shallow supers and toss them off double.

Yes, in consideration of my locality and

Beekeeping as a Side Line

Grace Allen

the fact that I am not a stevedore, I have definitely planned all full-depth bodies for brood-chambers, and expect to take surplus honey hereafter a l-

most entirely from shallow frames. Unless, indeed, I finally get into Long Idea hives. That experiment was scheduled for this season, but somehow the cogs slipped, and so it must await 1919 for trial.

* * *

In spite of the fact that in the last three weeks we have made rapid downward revision of our crop prospects, and the total will doubtless fall far short of our hopes, yet the contrast between our new country location and our own home yard continues to be impressive. In the country, a few hives grew to quite a chummy height—another super, and the bees and I would have stood shoulder to shoulder. Altho this noble height was partly the result of hopes that failed to materialize, yet for any such towering condition, I choose the shallow supers, for the large combs, if filled, I have to lift cut one by one till the super is of a liftable weight; and that is certainly a slow and tedious process.

* * *

The Pellet plan of increase (based on raising and mating the young queen in a super), tried out in three colonies, was successful in two. In the third, the young queen was found lying dead on one of the top bars. But, except for making the hole in the supers, I liked the method very much—it was so safe and sane. In fact, it looks almost fool-proof. Even where there was no increase, there could be no loss. While there is no surplus in the hives whose brood was thus raised to start the new colonies, that fact would seem chargeable to the person rather than the system. The new colony I set off yesterday is populous and has a wealth of stores, and is in much better shape than the little colonies started at about the same time, as nuclei. Whether big producers would care for it or not, it seems well worth while for side-line beekeepers to try out.

* * *

When workers are seen tugging away at drones, the end of the honey flow is likely upon us. When they start a wild case of robbing, it quite surely is. Both of these unwelcome occurrences were part of one day's demonstration at Peabody College Summer School last week. Combs of honey that would have been left unmolested two weeks before started a little riot before I realized. The usually gentle colony became resentful—to the great regret of at least one student—and hives had to be closed in a hurry. I tossed weeds over the entrances, plied the smoker vigorously (lacking car-

bolic or kerosene) around covers and cracks, and sat down on a box to watch developments. After a bit things quieted down, and I left them—apparently well-behaved and worthy citizens of the peaceful little bird preserve where they are located. But this morning comes the message that they are making life miserable for the young women who are canning some precious sweets in the demonstration kitchen! Truly the way of the beekeeper is hard.

* * *

On page 430, July Gleanings, Mr. Byer speaks of how early city people begin inquiring for honey. At our last little county meeting, one of our city backlot beekeepers remarked that her neighbors hang over her fence, asking for honey. "Got any honey?" one of them asked one evening. "Not to sell," was the answer. "Well, will you have some tomorrow?" she persisted—"just exactly as if she were asking for eggs," the backlotter concluded, "for she seemed to think I gathered a little every day."

* * *

Not having seen Dr. Phillips' article in the May Scientific American, I was greatly interested in the excerpt quoted in the July Gleanings, page 430. I have sometimes wondered if we tend more towards increasing the number of beekeepers than towards raising the standards of beekeeping. In giving an address on bee culture recently before the School of Rural Life at Peabody College, where quite a good many of the students were training with the hope of becoming county agents, I tried hard to impress the idea that poor beekeeping was worse than none at all, always dragging down the industry and the state wherein it was allowed. And so much insistence did I put on the necessity of reading and study and conscientious intelligent work that one young lady told me afterwards that I had scared her out of her idea of some day keeping bees! Now that was certainly bad work on my part; yet after all, if she really isn't willing to study and read and work intelligently and hard, maybe it is just as well for Tennessee beekeeping that she did get scared out.

* * *

Of course it is among the side-line beekeepers that those are to be found that need to take to themselves the advice to sell out to good beekeepers, or become good ones themselves. The men who are depending upon their bees for a living will surely give them good attention. Those who are keeping them only as a pleasant side line may do so, if not for ambitious or business reasons, then perhaps for the sheer love of it. But there is another class, made up of those who think it a good idea to have a few bees just to get a little honey for their families. Their real work is something entirely different, and it is there they put their thought and study and effort—if anywhere.

The bees may swarm merrily at will or be weakened by disease or attacked by bee moth or left to starve. They may become a real menace to progressive beekeepers. Or if nothing disastrous occurs, they may simply not be living up to their own possibilities. That is a serious thing, in bees or beekeepers either, failing to live up to their possibilities.

Whatever a colony of bees is capable of producing in a given location, in a given season, that it should produce. Anything short of that achievement is relative failure. And as we can't very well upbraid the bees, we must turn to their keepers. I wish every side-line reader of Gleanings, who has not already done so, would graduate this very summer from the class that says, "Yes, I've got a few hives of bees—they don't do much good, tho—they swarm a lot and all, but somehow they don't do much good—weevils get in 'em, I guess—no, I don't bother with 'em much—just rob 'em once in a while. They don't do much good."

One beekeeper told us this spring he had had two colonies four years and had produced 25 or 30 pounds of honey, all told. We bought his bees.

Even if our living doesn't depend on it, we ought to be as good side liners as we can. Especially in these days. With sugar conditions as they are, every beekeeper, tho he owns but one colony, should work hard to make every bee work hard to get every possible drop of nectar stored in a honey cell and ripened. This means not only study, but well-directed study; not only work, but systematized work. More and more I become impressed with that fact. We can work tremendously and yet fail to accomplish what could have been done with less actual labor, if there had been just a little more method—or perhaps a great deal more.

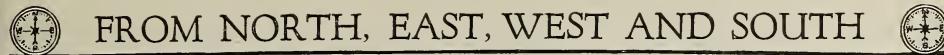
* * *

IN MEMORIAM: G. M. DOOLITTLE.

What unimagined things you may have found!
What sudden, unguessed beauty all around!
Ah tell us, are your dreams in blossom there?
And is there eager radiance in the air,
And surge of glory hinted us of old—
That more than half that never has been told?
And is there something tender there and sweet,
And very satisfying and complete?
And do you walk unweared those high ways
That God has walked thru immemorial days,
And drink great joys that thrill you thru and thru
And leave no sadness at the heart of you?

Thru grievous days or glad the bees will hum,
Yet you, who loved their murmur, will not come.
Why should you come? Why should you come, O
friend,

From things unending back to things that end,
And things that hurt, and dreams that come not true
Altho their dreaming thrills us thru and thru?
But sometimes when our bees take fearless flight
Across great summer floods of golden light
To where some distant beauty breaks in flower,
And earth seems perfect thru one perfect hour,
These wings shall somehow make us think of you,
And we shall smile, and know God's dreams come
true.


 FROM NORTH, EAST, WEST AND SOUTH

In Northern California—Crop conditions, on the whole, are favorable. Extracting in the valleys started two or three weeks earlier than last season. The president of the Central Valley Honey Producers' Co-operative Exchange, J. H. Flory, reports that he has his first car of honey for this season. Mr. Flory's car is the first received by this local exchange, and it will be marketed thru our state exchange.

Northern California has three of the ten local exchanges organized in the State. They are the following: Southern Valley Honey Producers' Co-operative Exchange which embraces the counties of Kern, Kings, Tulare, Fresno, and Madera. The directors are W. E. Pilkington of Hanford, L. C. McCubbin of Fresno, F. D. Lowe of Bakersfield, C. W. Tompkins of Tulare, and R. H. Ellithorpe of Fresno. Mr. Pilkington is president and Mr. Ellithorpe secretary. The counties directly north of the above mentioned exchange; namely, Merced, Stanislaus, San Joaquin, and counties east, cover the territory handled by the Central Valley Honey Producers' Co-operative Exchange. J. H. Flory of Dos Palos, W. W. Thompson of Dos Palos, H. E. Wolfe of Stockton, Willis Lynch of Stockton, and M. C. Richter of Modesto are the directors. The president and secretary are, respectively, J. H. Flory and Willis Lynch. The Superior California Honey Producers' Co-operative Exchange takes in all counties north of San Joaquin. The directors of this exchange are B. B. Hogaboom of Elk Grove, J. R. Case of Chico, Harry K. Hill of Willows, Oliver Parks of Davis, and L. D. Walker of Sacramento. Mr. Hogaboom is president and Mr. Hill secretary. Any beekeepers who are interested in our organization work and who are not already members of the above exchanges are invited to write to the secretaries of the locals wherein they are situated. Our local secretaries will be glad to give information pertaining to their exchanges. There is yet another local exchange to be organized in our section of the State. It will cover the territory of Monterey, Santa Cruz, and adjoining counties. Our campaign work in this district will start sometime during the fall.

On June 26 the promotion committee completed its work on organization. On that date there met in San Francisco the members of the promotion committee and duly elected delegates representing the already organized locals. In accordance with the agreement, which the promotion committee has had circulated thruout the State, this body decided that its campaign work had been successful, inasmuch as six local exchanges had been organized and that 60,000 colonies of bees had been signed up. (As a matter of fact 10 local exchanges are now

incorporated and approximately 80,000 colonies of bees are represented on the marketing agreement). The delegates of the local exchanges met next and proceeded to formulate a plan for the organization of the California Honey Producers' Co-operative Exchange. From among their number they chose a board of six directors and the State Market Commissioner selected the seventh director. The directors chosen were J. D. Bixby of Covina, M. C. Richter of Modesto, W. A. Tricky of Laws, Chas. B. Justice of Alpine, Oliver Parks of Davis, Wm. Gunterman of Calexico, and Colonel Harris Weinstock, the latter having named himself temporarily to the position. The temporary officers are: J. D. Bixby, president; Chas. B. Justice, vice president; and M. C. Richter, secretary; the executive committee consists of Messrs. Tricky, Richter, and the appointee of the state market commissioner, who is yet to be named. A. B. Massey has been selected as general manager of the State Exchange and the office of the Exchange is in the Union Terminal Building in Los Angeles. Within a short time the State Exchange will be in a position to handle the 1918 crop of its members.

Honey prices within the last month have not materially changed, and the demand for our honey continues to be very active. It is principally for export, and, despite the fact that shipping space is hard to procure, it is nevertheless true that a considerable quantity of honey is going abroad. It is interesting to note that the British food ministry is considering the rationing of jam owing to the partial failure of the fruit crops in Great Britain. This condition would greatly stimulate the exportation of honey. Furthermore, the War Trade Board has come to an agreement with Norway that, under certain conditions, the Norwegian Wholesale Grocers' Association is permitted to import honey from the United States.

M. C. Richter.
Modesto, Calif.

* * *

In Southern California—Many beekeepers, whose bees were slow in building up and were scarcely ready for the beginning of the orange-honey flow, found them in excellent condition at its close. Those who moved directly to the white sage after the orange blossoms were gone, have met with fine success and got good results from that source. Reports of from 40 to 50 pounds per colony from the white sage alone are not at all uncommon. In years past it has proved a very uncertain yielder on the southern California ranges, but this was one of the seasons when it furnished honey abundantly. The buckwheat is just beginning to yield a little honey. From my experience these snow-white clusters of bloom must



FROM NORTH, EAST, WEST AND SOUTH



turn a trifle brown before they are ready to give up much nectar. In most sections, there is a good healthy growth and an abundance of bloom. The prospects are, therefore, good, at least for one extracting. The sumac, which is scattered all over the Coast Range of mountains of southern California, and blooms the latter part of June and the early part of July, looks fine. But the uncertainty of this plant makes many beekeepers consider themselves lucky, indeed, if the bees fill up for the winter from this source. These are the last of the wild shrubs to furnish honey of any considerable amount in the uncultivated sections of the southern part of the State. It is too early yet to say what the blue-curl will do. This plant grows most successfully on the cultivated fields and comes up just after the grain has been cut. In some sections it yields considerable honey and continues to bloom until the rain comes or a frost kills it. It is a drouth plant and rain seems to be its ruin.

That section of the country along the Colorado River, near Yuma, Ariz., where the mesquite usually furnishes a great early honey flow, has not made the usual crop. High winds during the blossoming period are held responsible for much of the trouble. In those parts where they also have the palo verde and alfalfa, they still hope for at least half a crop. This includes the extreme eastern part of Riverside County and lies along the Colorado River. It has much the same climate and soil conditions as the Imperial Valley. However, the Imperial County beekeepers will fare better and are getting a fairly good crop, but they have no hopes of getting anything like the old-time bumper crop when yields of 250 to 350 pounds per colony were not unknown. Inyo County, the great comb-honey district of California, promises a good crop. The southern end of the valley is about three or four weeks earlier than the northern part. While the apiarists of the northern end of the county are just beginning to put on supers, some beekeepers in the southern part have them stacked four and five supers high.

After several picnics and "get-together" meetings, the beekeepers of San Bernardino and Riverside Counties have organized themselves into the Orange Belt Co-operative Honey Producers' Exchange with headquarters at Riverside. The following are the officers of the exchange: H. A. Wagner, Redlands, president; J. A. Mack, Bloomington, vice-president; E. W. Horne, 1551 Victoria Ave., Riverside, secretary and manager; R. Powell, Riverside, treasurer; L. L. Andrews, Corona, director. Wagner and Andrews were elected delegates to attend the meeting at San Francisco for the formation of a state exchange. Ten district exchanges have been organized thru-

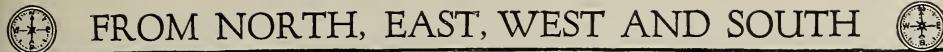
out the State, with nearly 100,000 colonies signed up. Imperial County exchange signed up about 95 per cent of the colonies; San Diego County, about 15,000 colonies; and Orange County has a good membership. Los Angeles County has a good start for a successful exchange. Inyo and the south coast counties also have excellent organizations. The state exchange was organized and Los Angeles chosen as the principal place of business. Details are being worked out by a directorate of six beekeepers selected from the various parts of the State. It is not certain yet whether the Exchange will be in a position to handle the honey crop this year or not. There is no doubt but that by next season we will be able to buy supplies for the beekeeper at a good saving over the retail prices. We will also be able to sell the honey of members of the Exchange for as much as the commission men do, thereby helping the members, and still not having the product cost the consumer any more than it does now. Poultry men, almond-growers, peach, walnut, prune, apricot and orange-growers of southern California have successful exchanges—and why not the beekeepers?

Honey prices are firm and buyers are offering as high as 18½ cents per pound for light amber and 21 cents or more per pound for white honey. Buyers seem willing to take any quantity of the darker shades, but a car at a time seems to be the way they are buying the white. An order that came to the secretary for 100 tons of amber honey will undoubtedly be filled by the boys of the Imperial Valley. They said they would have no trouble in filling this order with light-amber alfalfa honey at a price of from 18 to 18½ cents per pound.

The value placed in Florida on having bees near the grapefruit trees is a fact that all of the beekeepers should try to impress upon the minds of citrus and deciduous fruit-growers. Each year it becomes more and more difficult to secure locations near the orange groves. If Florida people realize the value of bees placed near their groves during the blooming period, why can we not have the California fruit-growers do the same? Yet we find many who still question their usefulness in the fertilization of the navel orange. In talking with grove owners, I find many who say that they saw very few bees on the orange blossoms this year. This must have been on account of the profusion of blossoms and the abundance of nectar in each blossom. Even with so many blossoms, a great number of localities will have considerably less than a normal crop of oranges for next season. I sometimes wonder if there were not enough bees to pollinate such a quantity of flowers.

Corona, Calif.

L. L. Andrews.



FROM NORTH, EAST, WEST AND SOUTH

In Iowa—The bees are not making much headway in Iowa thus far this season. Too much cool weather, along with heavy showers, keeping them indoors so much that many are still feeding a little. Not much swarming so far, and in some apiaries none at all. The basswood bloom is over, but white clover is in fine condition. We are expecting fine results from it.

If you Iowa beekeepers ever expect to receive a respectable price for your honey crops, for goodness sake, wake up to some business sense. Organize yourselves for self-protection in the honey market, the same as other producers do in their lines. The fruit men are organized, so are the meat men, the grocerymen, etc. Now when State Apiarist F. Eric Millen comes to your county to hold a beekeepers' meeting, be sure to attend, and also have your bee neighbors present. Then organize a county association and make it a branch of the Iowa Beekeepers' Association. If you don't organize, you will never count for much in the honey business, especially when you will allow a traveling buyer to come to you and name the price at which you must sell if you ever get rid of your honey.

Dr. A. F. Bonney of Buck Grove asks why not have the annual meeting of the Iowa Beekeepers' Association in November instead of December. He believes, and so do I, that it would be more convenient for the beemen in general. Now is also a good time to arrange the chain of state association meeting dates, so that the editors of bee journals and other prominent beemen could attend a number, if not all, of them, to the great delight of the many who would never be able to meet them in any other way. Such meetings would lead to a better understanding of each other.

Marshalltown, Ia. Hamlin B. Miller.

* * *

In Michigan—This is none too early, in a region as far north as Michigan, to make plans for the successful wintering of the bees. If bees are to be wintered outside, there is no protection equal to that afforded by good packing cases. Plans for good two-colony packing cases will be furnished free to those who apply to the State Inspector of Apiaries, East Lansing, Mich.

The beekeepers of Oakland and Gratiot Counties were favored with a visit from E. R. Root and family on the occasion of the field meetings of the two counties in June. This is another example of the benefit of county organizations, for, without them, very few of the beekeepers of those counties would have had the pleasure of meeting Mr. Root.

Beekeepers who apply for sugar for feeding this fall will be asked some rather point-

ed questions as to whether or not a crop of honey was secured, extracted, and sold instead of combs of honey being saved for feeding. It might seem like good business to some to sell honey at the present price and replace it with sugar at about nine cents per pound. If the affidavit discloses that the beekeeper has figured on doing this there is grave doubt as to whether or not, under such circumstances, the Food Administrator will issue a permit for buying sugar. In saving combs of honey for feeding, be sure that they come from healthy colonies.

The date of the annual meeting of the State Beekeepers' Association has been fixed for Dec. 10, 11, 12. The place of meeting will be Battle Creek. A very good program is being arranged, and complete programs will be mailed upon request as soon as issued. Many of the county associations are arranging to send delegations. Each county association should hold one or more meetings in the meantime and arrange for as large a number of its members as possible to attend. In a business way it will pay to come, as some questions of very vital importance will be discussed and the course of action decided upon. B. F. Kindig.

East Lansing, Mich.

* * *

In Ontario—We are living in abnormal times, and the weather during the past few months here in Ontario has been quite in keeping with the general condition of affairs. June was unseasonably cool during most of the month, and the first day of July was more like October than summer time, as an overcoat was quite in order when driving. A light frost came in some few places on the morning of July 2, but since then we have had weather a bit more seasonable. During the past few weeks rainfall has been abundant in most parts of the country, and at date of writing (July 5) clover, both white and alsike, is quite plentiful in most localities and very abundant in many places. Little nectar was gathered during June, and while there is a fair flow on just now, clover is quite advanced; and, as before stated in these columns, in many apiaries the bees are sadly depleted in numbers, and what colonies are left are in many instances in none too good condition to take advantage of the flow, be it light or heavy.

Inquiries are frequent for honey from both retail and wholesale sources, but so far I have heard of no prices being quoted or any honey offered. In our locality, at least, it will be two weeks before any honey will be extracted, judging by present outlook.

Wherever I have examined the basswoods, prospects are for a very light bloom, so it does not look as if there would be much honey from that source this season. However, it is a very uncertain yielder of late



FROM NORTH, EAST, WEST AND SOUTH



years even where trees are still fairly abundant, so it is not counted on very much any more in most parts of Ontario.

While I have no idea as to condition in the Province at large in regard to prospects for buckwheat, in our own locality the heaviest acreage ever grown is being sown. The grain has gone into the ground in an ideal condition, as soil worked up well, and frequent rains insure quick germination of the seed. A buckwheat flow in August makes things splendid for building up nuclei that have been made to make up losses, or for increase; for if the nucleus is formed during clover flow with a comb or two of brood and queen, it is very easy to draw brood from strong colonies in August, when buckwheat is yielding, to make up these little colonies to full strength. Possibly, that system works out about the cheapest and most simple of any plan known for making increase—at least I prefer it to any other way I have ever tried, and at present I have a number of nuclei formed for just that purpose.

This so-called "disappearing disease" is certainly a mystery in so far as we have any positive knowledge as to what causes the malady. During a warm, dry spell in May this year, it appeared in many apiaries, doing a lot of damage at a time when the adult bees were badly needed to keep up strength in colonies none too strong after the severe winter. Then it stopped just as suddenly as it first started. Locally we saw nothing more of it till about a week ago, when I walked into one of our apiaries one morning and found the ground literally covered with bees frantically traveling in every direction. A visit to another apiary in the afternoon showed clusters of dead bees in every little hollow in the ground, showing that the same trouble had been there also. I saw nothing since till this morning, when I again noticed a lot of bees acting the same way. The weather has been warm and no rain for a week, with honey coming in from clover. If food causes this trouble as claimed by many, how can we reconcile that idea when bees are getting fresh honey and pollen from clover? We may know a little about this disease, but, certainly, what is not known about it is by far the larger quantity.

Markham, Ont.

J. L. Byer.

* * *

In Texas—It is a matter of considerable wonder how well so many of the beekeepers really do make out. The impressions of this State were well summed up recently by one in a position to state, as follows: "If you are doing so well with present methods, what could you do with good practices?" So many beekeepers of this State are just keeping bees and getting what they can. The ability to recognize the brood diseases of bees is lacking with a very

great percentage of the beekeepers. No wonder beekeeping is not in any better standing than it is, and no wonder so many can not make money at it. It would seem to be the proper order of things to learn something about the pitfalls of beekeeping before investing much capital. Any beekeeper who pretends to keep bees, should be able to diagnose American foul brood as a matter of self-protection. After the bees have been lost, there is no time to begin to inquire into the details of how it looks and how it acts. Only the beekeeper is to blame for the present standard of industry.

The beekeeper is often forced to explain at length that bees really made the honey he is offering for sale, and that honey is really a fit food for human consumption. When one sees some of the packages of honey put on local markets, it is evident that the consumer has reason for questions. It is a matter of no surprise that syrup is preferred in many sections. Fermented honey is often placed on the market, and such a practice makes future sales of honey very difficult even for a good product. Many who sell honey do not know just the proper honey to put on the market, and then there are many who innocently put in unsealed and unripe honey. Furthermore, many are careless and allow pollen and broken parts of the bees to remain in the honey sold on the market. Such practice will ruin a good market. Much honey is purchased by the dealers from parties unknown, and the containers have no standard label, so that if the contents are unsatisfactory, it is difficult to get the poor goods replaced. This is a day of fancy markets, and the beekeeper must come to realize that fact. The consumer demands a first-class product put up in first-class manner.

The Extension Service at A. & M. College expects to do considerable extension work in apiculture during the coming year. The beekeepers will certainly welcome this announcement. There is a big field for the work in this State and there is no doubt but that decided results can be obtained. The work will be started with the smaller beekeepers and in those sections where the industry is not developed at present, but where conditions are favorable to beekeeping with modern methods.

The shippers of pound packages of bees have had a very difficult season. The drouth reduced the honey flow so that the bees could not build up. The season was equally unfavorable for queen-breeding.

Conditions over the State have generally improved during the past month. In some sections prospects now are quite good for a honey flow. During the last week, local rains have occurred over much of the honey-producing territory. In much of the mesquite section, there has been a good second



FROM NORTH, EAST, WEST AND SOUTH



flow this year. However, along the northern limit of the range of this plant, this flow was very much reduced by drouth. In some localities in the central part of the State the extreme drouth has reduced the honey flow to the minimum. Wherever rains have occurred thruout the cotton belt, the prospects are very good for a honey crop. In the eastern part of the State the conditions are dependent on local rains and consequently are variable. Thruout north Texas the prospects are very good and the bees are now in good condition. F. B. Paddock.

* * *

In Florida—About a year ago a Tampa beekeeper called attention to a plant on which he found the bees working heavily near St. Petersburg. He secured some of the seeds and planted them at one of his yards, and he now has a fine patch in full bloom and alive with bees. It now develops that this plant is the yellow sweet clover, and the fact that this variety of clover will thrive in Florida soil should be of interest to all beekeepers, as it may open up another valuable source of nectar. My informant states that a friend engaged in the cattle business will plant 40 acres to yellow sweet clover next year. I believe small quantities of seed can be procured from the Kilgore Seed Co. of Plant City, Fla. Probably "flatwoods" land will be found the most suitable for this variety, as it requires plenty of moisture.

South Florida seems to have been especially favored this year so far as honey production is concerned. Reports continue to come in of bumper crops of saw palmetto honey,

and, from the far south, of heavy yields from mangrove. Apiaries situated near tidewater have had a fine crop from mangrove, which, this year, has bloomed from April to July. Some beemen are wondering why the representative of one of the largest honey-buying concerns is only offering 17 cents for mangrove honey at the time when he is paying 20 cents for palmetto. It has been stated repeatedly that mangrove is one of the best honeys that Florida produces, and yet we are asked to sell it at a discount of 3 cents per pound. Can the editor explain this? [We cannot, except that honey-buyers are not always consistent nor liberal.—Editor.]

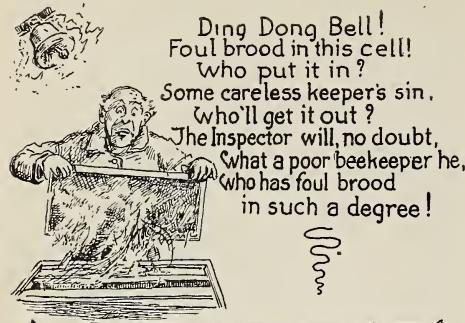
Today, July 5, the bees are working heavily on orange bloom—or, to be more correct, grapefruit bloom. And it is not a scattering bloom either, for the trees are as white as they ever were during a spring bloom. The grapefruit trees did not bloom at all in the spring, nor did they in May, when we usually expect more or less bloom; but now in July they are putting out a big bloom, and the honey is going into the supers. Cabbage palmetto has begun to yield, and in the swamp yards considerable is coming in. There will be splendid cabbage bloom in this section, tho reports from further south speak of a poor prospect. If weather conditions are just right, we should make a good crop from this source. There is, however, such a thing as a big bloom but little or no honey, and the cabbage palmetto is one of the trees that often disappoints us in this respect. Given weather just right it yields profusely; but if it is too wet or too dry, the biggest bloom will amount to nothing.

Harry Hewitt.



Apiary of the president of the National Beekeepers' Association at Fillion, Mich.

HEADS OF GRAIN FROM DIFFERENT FIELDS



How to Beat the Mice and Ants.

To those that are bothered with ants and mice I will give my remedy. I build benches and set my hives on them and keep the ground beneath them scraped clean. On the legs of the bench, about three-fourth of the way up, I put a band of tree tangle-foot, three or four inches in width, which will keep ants and mice off for a long time without renewing.

Virgil, Kan.

To those that are bothered with ants and mice I will give my remedy. I build benches and set my hives on them and keep the ground beneath them scraped clean. On the legs of the bench, about three-fourth of the way up, I put a band of tree tangle-foot, three or four inches in width, which will keep ants and mice off for a long time without renewing.

John Thornton.

Another Way of Uniting Colonies.

I have found it an easy and simple way to unite colonies as follows: Toward evening, I take the cover off the colony which is going to remain on its stand, and put a queen-excluder on top, leaving the colony open for one-half hour. Then I take the excluder away and put one sheet of newspaper in its place, making a hole of one-half inch in the middle. I then place the other colony on top. In the morning the sheet of newspaper can be found in front of the hive in a thousand scraps, and not a single bee hurt.

E. Uyldert.
New Brunswick, N. J.

Ventilation-at-the-Top Plan.

I have tried a way of giving my bees some ventilation at the top of the hive, which has worked very successfully. I make a frame the size of the hive,

tack wire screen over it, and place it on the top super with the cover-board removed. The ends of the screen frame are about $\frac{3}{8}$ inch thicker than the side pieces on one side, and I put the screen on with that side up, so that when the cover-board is on the screen there is a $\frac{3}{8}$ -inch air space on two sides lengthwise of the super.

I first tried this plan on a hive on the front of which the bees were clustered out. They soon were nearly all inside, and I noticed they did not cluster out any more. So I put some on other hives, with the same results. I believe it will also keep down, to some extent, the desire to swarm. I am going to leave those screens on during the hot-weather season.

J. A. Bryant.

Waverly, Va.

Disinfecting Hives and Supers.

A great many bee-keepers are fearful about using hives and equipment that have been occupied by bees that have had foul brood. Of course, they are used more or less—more now than formerly. Some beekeepers may be very thorough in the way they disinfect, (by burning or scorching until charred, which leaves the hives in a very dirty condition) and even then leave some undestroyed culture or germ in the rabbets or crevices. I think a sure and complete job can be made by baking the hives and equipments in a solar oven. A hotbed sash or two placed over a light box slightly tilted will complete at small cost an oven large enough to hold several hives. The scorching, hot air will very soon permeate every crevice and destroy every culture or germ without injuring the hives or supers in the least.

A. C. Gilbert.

East Avon, N. Y.

The Screen in the Uncapping-Barrel.

For years I have been using an uncapping-barrel similar to, yet better than the one described in the April issue of Gleanings. After trying different depths I have found that the wire screen tacked six inches from the bottom gives the best results, since it allows the honey to float the cappings above the screen. After mashing the cappings the honey drains thru a filter without clogging; but when it is put midway up, it clogs and refuses to drain. When the barrel is one-fourth full, and again when it is half full of cappings, I stir and mash up thoroughly with a flat wooden paddle. When the barrel is full I draw off a portion and continue to uncapping until the work is finished. If you are going to uncapping from day to day, do not uncapping on the previous day's work, but take it out. After the day's work is over, put back the cappings from the preceding day and allow them to drain until they become dry. A

HEADS OF GRAIN FROM DIFFERENT FIELDS

container should be placed to catch the drained honey. I have had as much as one and one-half barrels a day go thru this uncapping-barrel, without the least trouble.

Medina, O.

J. E. Thompson.

Friction-top Pail I do not agree with the Best Container. the idea that extracted honey should be sold in glass bottles to any great extent. To strive for a trade in fancy bottles of individual design seems to be directly counter to sound principles of merchandising, since in such sales the container and its packing must cost more than its contents. Manufacturers of syrups that sell at the price of honey or a little less are not so foolish. Nor do I think that selling in 60-pound cans is efficient marketing. My experience convinces me that there is an unlimited sale for honey in 10-pound friction-top pails, with a small percentage of fives and perhaps twos, and that at extracting time a slight addition to the work of preparing for market will enable careful producers to furnish honey in carload lots in such containers to the entire satisfaction of the trade. Such a net saving in useless expense could not be less than two cents per pound. Harrison H. Brown.

Laplate, N. M.

Double or Single-Walled-Hive? At least in the vicinity of Albany, N. Y.,

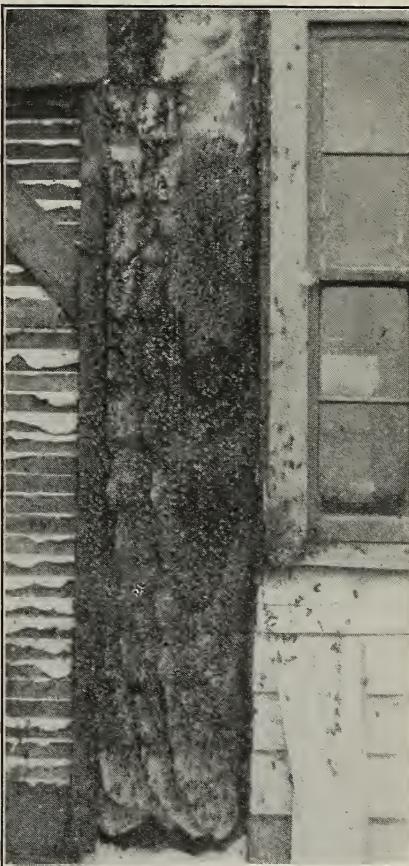
I think the desire on the part of many of our beekeepers to use the cheapest single-walled hive is a big mistake. The double-walled hive is much better for the bees, either summer or winter. A boiling-hot July sun shining on a single-walled hive will sometimes melt the combs down in spite of all the ventilation the bees can make. With the double-walled hive, combs will not melt down, and it probably requires less work for the bees in providing ventilation—and ventilation work is not making honey. Shade? It is not always possible to have the natural kind, and for artificial shade the double-walled fills the bill better than any other kind. For wintering, if outdoors, the superiority of the double-walled hive is not disputed; and if to this advantage be added a third wall or interior ease to hold frames on end and packing used, bees will winter in very good shape.

O. F. Rowland.

Albany, N. Y.

be removed from inside the wall of a building where they have taken up their home?" Not long ago Gleanings received in one mail four such inquiries, showing that the bees very much like quarters between the partitions of a building. Accordingly some general directions for getting bees "from out of in between" seem to be in order.

If it is at all possible to remove the combs, the transferring may be done according to the usual method of transferring from box hives. In case the bees are in an inaccessible place it would be very easy to remove the bees, but to remove the queen also would be quite another proposition. To remove the bees, attach a bee-escape to their entrance so that they may escape from their home but be unable to return. Place near their entrance a small nucleus. If the two



Colony of bees taken from the wall of a house by C. R. Zimmerman, Swanton, Ohio. The width of the space occupied was 14 inches, and the length of the comb was seven feet, two inches.

Bees in the Wall of a Building.

Very much more frequently than one would think, this question is asked: "How can a colony of bees

entrances are placed very near each other, then when the bees find it impossible to return to their old home, they will readily enter the new one. The queen and few remaining bees in the wall may be killed by putting sulphur in the smoker and blowing the fumes of it into the opening. It might be possible to obtain the queen with the bees, if it were possible to blow smoke onto the combs from the side opposite the entrance. Unless the combs were removed from the wall, the only way you could be certain of getting the queen would be to wait until they swarm and then hive the swarm. In this case you would have the old colony still in the wall unless they too were sulphured as above suggested. If it is desired to place the colony in a different part of the yard, it should be moved a short distance several successive times—perhaps moving but a foot the first day and then later gradually increasing the distances. If moved too far at one time, the bees will be unable to find their hive.

Uniting, and the
Disappearing
Disease.

In regard to your article, page 829, on uniting weak colonies in the autumn, I will say that, if one of the queens is removed three days before the colonies are united, you need not cage the remaining queen nor use paper between the hives. Simply place the queenless hive under the other, and the work will be done. Or, smoke both colonies, remove all the combs but four or five of the heaviest ones from each hive, and carry the queenless bees and combs to the queen-right one, alternating the combs and bees. Do this in the evening, and all will be well in the morning, with no retiring bees.

We had our second installment of the disappearing disease this last summer, reducing the surplus honey to about 15 lbs. per colony. Mildew on the flowers, induced by the wet weather, seems to be the cause of the disease—at least dry weather soon effected a change in the death-rate.

North Toronto, Can

F. P. CLARE.



THE BACK LOT BUZZER.
Speaking of European foul brood, why not?

THE first price recommendations for 1918 of the Chicago - Northwestern Beekeepers' Association are important, as affecting the market price as well as establishing uniformity in price. These honey-price recommendations (date of July 20) are as follows: Extracted, wholesale, 23 to 25 cents; retail, 5 to 10 cents per pound higher according to size of package and method of selling. Comb honey, wholesale, 30 cents per pound; retail, 5 to 10 cents higher. These recommendations are accompanied by the statement that the honey crop generally is shorter than that of last year.

* * *

A field meeting of the New Jersey Beekeepers' Association will be held at O. N. Whitaker's apiary, at Branchville, Suffolk County, on Aug. 9, beginning at 10 a. m.

* * *

The Eastern Massachusetts Society, in conjunction with the Massachusetts State Association, will hold a field day on Saturday, Aug. 17, at the Norfolk County Agricultural School (Plymptonville R. R. station.)

* * *

There will be a beekeepers' picnic and meeting of the New York State Association of Beekeepers' Societies on Aug. 2, at Hays Corners, the summer home and apiary of C. B. Howard, president of the Societies. An exceptionally good program has been prepared for this event.

* * *

A field meeting of the Ohio Beekeepers' Association will be held with the A. I. Root Company at Medina on Thursday, Aug. 15. Every beekeeper who can possibly reach Medina on the day of this field meet is cordially invited, and an effort will be made to entertain them royally.

* * *

Prof. Geo. A. Coleman, Apiculturist, Department of Entomology, University of California, sends notice of the organization of the "Western Bee Farms Corporation", with a capital stock of \$100,000, a large part of which is already paid up. The Bee Farms will be chiefly located in Santa Cruz and Monterey Counties. The apicultural director will have charge of the selection of sites and general scientific management. One or more queen-breeding yards will be established and careful records kept of the performance of each queen and her progeny. A weather station is to be established at each bee-yard and a central station at the queen-rearing yard fully equipped with automatic instruments for the recording and study of weather conditions as affecting queen-rearing and the work of each apiary

* * *



every day in the year. A central extracting plant is to be established for about every 5,000 colonies, and Ford trucks will be used for transportation.

Honey-Crop Prospects.

Reviewing the honey-crop situation throughout the whole country, an approximately correct summarization of conditions would be as follows: California, when the crop has been fully harvested, will be at least fair; crop of the Rocky Mountain States very good; Texas crop considerably better than last year; Florida crop one of the best in years; crop of the Mississippi Valley and Eastern States generally much below the average.

Inquiries sent out to prominent beekeepers in various parts of the country have brought us the following condensed answers: Colorado, possibly a little above the average crop; Idaho, prospects good for average crop or better, with quality all water-white with excellent flavor; Oregon, fair average yield, mountain districts good yield; Utah a full honey crop in prospect; Iowa, amount of crop doubtful; Illinois, white-clover honey flow fairly good with prospects for a fall flow as good as last year; Wisconsin, weather conditions for honey gathering exceedingly bad during almost all of clover bloom and basswood, crop generally reported very small; Minnesota, weather conditions generally bad during honey-flow period, combined with heavy losses of bees, have resulted in small crop; Kentucky, crop about 50 per cent of last year; Michigan, northern part of the State generally will have a poor crop altho there are local exceptions, a good crop in the central part of the State, average per colony in the southern part of the State 40 pounds; New York State, weather generally unfavorable during honey flow, which, with only about one-half of a normal yield of honey combined with a winter loss of about 50 per cent of the bees, makes the crop for the State about 25 per cent normal, but the buckwheat acreage is large and a considerable crop may be expected from it (basswood making a good yield the middle of July and so increasing the crop materially in places); Pennsylvania, number of colonies abnormally low because of winterkilling, but honey flow excellent and prospect for buckwheat crop much better than usual; New Jersey, crop very small on account of small spring colonies and very unfavorable gathering weather; New England, clover conditions excellent but weather conditions very poor, with prospects of a comparatively small crop in most places; Ontario, crop will be light as a whole, altho very excellent crops are reported from scattered places.

QUESTION.

Last winter we lost 17 out of 81 colonies of bees, most of them the strongest in the yard, just because we could not get sugar to feed them; and I am afraid that we shall again find our bees poorly provided with stores this fall. So I am thinking, if I could not get sugar enough to feed them this fall, I might destroy half the queens about the middle of August, to stop the increase, and double the colonies up into 40 or 45 colonies. Please advise me in regard to this plan.

C. A. Bunch.

Indiana.

Answer.—We should certainly hate to kill half the queens and double up the colonies in the way you suggest, for we believe that you will be able to obtain the sugar, altho, of course, we cannot be certain of this. In many cases 10 pounds of sugar would keep a colony from starving during the winter, if they already have some stores in their brood-chambers. Next year that same colony would probabfy produce 100 or 150 pounds of honey. Now, it hardly seems likely that the Government would be shortsighted enough to attempt to save 10 pounds of sugar and thereby lose 10 or 15 times as much honey. In fact, since the war began our Government has shown no such inclination, but has evinced a strong desire to help the producer to increase his output. We suggest that you fill out an application for sugar, similar to the one given on page 74 of our February issue. If you are able to save all of these colonies for next season's crop, it would clearly be a patriotic duty, since it would add so much to the world's supply of sweets.

Question.—A peculiar case took place in our apary this month. I had a colony of bees with two supers above a queen-excluder. The bees found an entrance between the top super and the cover. When I opened the hive, I found the top super with laying worker brood. I concluded that they had lost their queen, and looked in the brood-chamber where I found a perfect laying queen with brood. When I shook the bees of the top super at the entrance of the hive, they refused to go in. Please let me know if you have experienced any similar cases.

A. DuBoulay.

Soudiere Estate, South Africa.

Answer.—Bees crossed with the Syrians or Cyprians sometimes behave exactly the way you mention, having both laying workers and a queen in the same hive, and often in the same brood-chamber. We do not know why the bees refused to enter the hive. It may simply have been hot and the hive already crowded. Perhaps the bees had been smoked until they were gorged with honey and therefore logy.

Question.—In the June number of Gleanings there was given a plan for swarm control which I used, raising the old brood-chamber above the two supers with an excluder just above the new brood-chamber. Now, since the drones are closed in above and run all over the sections, I would like to know how long to keep the excluder on. And



would it be all right to take it out after the brood above hatches?

Edwin A. Wright.
Pennsylvania.

Answer.—The plan to which you refer is for the production

of extracted, and not comb honey. That is why the excluder was used, in order to prevent the queen from going above and laying in the drawn combs of the empty supers. If the supers were filled with sections of foundation, the queen would not be likely to go above even if no excluder were used. However, as just stated, the plan is not intended nor is it suitable for the production of comb honey, which requires that but a small amount of super room be given at a time, and, preferably, that this be given at the warmest part of the hive. When running for extracted honey, if it is found that the drones collect above the excluders, the supers may be lifted off, and then replaced. But unless one has an excessive amount of drone brood in the hive, this will not be necessary, for, when the hive is examined the next time, the drones would naturally fall from the excluders, and thus the matter would be remedied without the beekeeper's giving it any thought whatever.

Question.—On page 336, June Gleanings, Mr. Holtermann says: "After seven or eight days I would go thru the colony." Seven or eight days from when—Thanksgiving day or the Fourth of July? Further along he says: "A beekeeper must, however, adjust himself to conditions. * * Bees might not follow the usual rule of casting the second swarm the eighth day after the issuance of the first, etc." I do not see what bearing this has on the subject at all. If he kills the queen and removes all queen-cells but one, there would be no swarming as I understand it.

C. E. Boddy.

Minnesota.

Answer.—When Mr. Holtermann said he would go thru the colony in seven or eight days he evidently had in mind the preceding sentence in which he stated that, as soon as the honey began to come in freely, the bees began to build queen-cells. Therefore he probably meant that, after queen-cells were started, in seven or eight days he killed the queen and removed every cell but one. When he said that "a beekeeper must, however, adjust himself to conditions," we believe that here he was thinking of the fact that sometimes it might be to the beekeeper's advantage to kill the queen, as he had just suggested, and in other instances it might be better to keep the queen if she seemed unusually good. Therefore it would be difficult to give any hard-and-fast rule as to the one best way to requeen. In any given instance it would be necessary to know something about the queen in question, and also weather conditions, flow of honey, etc. These factors would all have a bearing on the best way of requeening. It might be possible that rainy weather would

prevent one from going thru his colonies seven or eight days after queen-cells had started, therefore at the advent of warm weather possibly a swarm would issue and escape from him. He would then have the problem of second swarms, which Mr. Holtermann suggests; and it would hardly be wise for him to put off manipulations for eight days longer, thinking that the second swarm would not issue until eight days had elapsed, because, as he points out, under some conditions the swarm might issue in three days. Therefore if one wished to make increase from the colonies that remained after the first swarm issued, the manipulation should be made soon after the first swarm left. In regard to your last sentence, you are quite right that, if the queen is killed and all queen-cells but one removed, there would usually be no swarming.

Question.—Will you kindly publish in Gleanings directions for combating the bee-moth or larvae?

California.

S. J. Paul.

Answer.—In order to prevent all trouble from the wax-moth in hives occupied by bees, it is only necessary to keep strong colonies in modern hives, and supplied with good Italian queens. All supers of combs stored in the honey-house should be piled and covered carefully so that no moth may gain access. If moths should appear in stored material, and yet the combs are not badly affected, they may be given to strong Italian colonies to clean up. If the condition is more serious, the combs will need to be fumigated. In this case, place at the top of the pile in an empty super a pan containing carbon bisulphide and leave tightly covered until the next day. The fumes when mixed with air are highly inflammable, and the fumigation should therefore be done outdoors away from the buildings. At 70 degrees F., 10 cubic feet of space requires about two ounces of carbon bisulphide for complete saturation. This kills everything except the eggs. In about 12 days when the eggs hatch another fumigation will be necessary. In estimating the amount of bisulphide needed, it should be remembered that the empty combs occupy a part of the super space, and, if filled with honey, they probably take up as much as two-thirds of the space.

ANSWERS BY C. C. MILLER

Questions.—(1) In queenless and in supersedure colonies I have not been able to get more than one cell accepted, altho I have tried eggs, different ages of larvae (with and without jelly), and also have given the cups to the bees to polish previously. What is the explanation? (2) Under what conditions will queenless colonies tear down a ripe cell on a frame of brood? I can not succeed without putting the cell in a West protector. (3) My best colony in 1916 proved worthless the following season. It had the same queen, but dwindled to about three broods, and we have had a couple of inches of dead bees around the entrance all summer. The larvae appeared to be all right, but something seemed the trouble with the old bees.

F. O.

Minnesota.

Answers.—(1) Hard to say, but it is possible that you had too small a force of bees. The whole force of a strong colony is none too much to prepare cells of best quality. You

may not have had a sufficient proportion of young bees. The weather and pasturage may have had something to do with it. Feeding will help, but it is better to have a good flow of nectar. A good thing is to use the bees of a colony that has of its own accord begun to rear cells for swarming. Possibly you might do better to try the plan of having cells built on a comb lying flat. A good deal was said about this a few years ago, but it seems not to have come into general use. I have tried it a few times with satisfaction. Fill a hive with empty combs, or combs nearly empty. On these lay flat a comb of brood from your best queen, the comb supported by sticks so that there shall be about an inch between the top bars and the lower surface of the comb. Over this a shallow super that shall come about half an inch higher than the upper surface of the comb. Set this hive in place of the hive of a strong colony, setting the latter on a new stand. Now shake or brush upon your flat comb the bees from three frames of your removed colony, of course making sure not to have the queen. Cover up and the field force will join the force you have brushed into the hive, and in ten days you will have a fine lot of cells that will be only on the under side, easily cut out, and leaving a much smaller hole in the comb than will be left when you cut out cells from a hanging frame. The instruction is to cut or scrape out certain rows of the cells, leaving only part of the cells. I do nothing of the kind; just leave the perfect comb, and the bees do good work. (2) Bees will tear down cells when queenless for so short a time that they have not yet discovered their queenlessness. Also, they may tear them down if queenless so long that they are thoroly reconciled to their condition of queenlessness. They are more inclined to do so in a discouraged condition, as in a time of dearth. (3) I don't know what the trouble was, but it looks a little like paralysis.

Question.—In the arrangement of the supers to prevent swarming, in the manner as shown in Fig. 68, page 195, in your book "Fifty Years Among the Bees," do you have any trouble in keeping rain out of the hives? do the bees go in and out of such openings? What time of the year do you arrange the supers in this manner and what month do you close them up again?

E. F. M.

Pennsylvania.

Answer.—The extracting-supers should be piled, each super shoved alternately backward and forward so as to make a ventilating space of $\frac{1}{4}$ to $\frac{1}{2}$ inch. There is nothing to prevent the rain entering these openings, but being at the ends of the hive and supers it cannot touch the brood; and I never knew harm to come from it. This extra ventilation is begun as soon as the ventilation seems needed, or about the beginning of clover bloom, and continued until the supers are removed in the fall. One might suppose the bees would use these openings for exit or entrance, but very rarely does that happen, probably because early in the season the bees had already formed the habit of using the regular entrance.

"THE difference in bees is not due to color nor to whether they have three bands or five bands. When men develop such highly refined taste for color on bees, it would be to their financial advantage if they became temporarily color-blind."—Louia Sherman, Baldwin County, Ala.

"Bees are booming this year."—F. A. Hayes, Lycoming County, Pa.

"Glad that M. A. O. is omitted from your clean paper."—Kore A. Peachey, Mifflin County, Pa.

"Our best honey plant is cotton. Prospects are good."—Eugene Holloway, Denton County, Tex.

"It should be about an average year for beekeepers here."—J. G. Harman, San Diego County, Cal.

"Bees in poor condition and very little honey in the mountain section."—G. W. McGuire, Avery County, N. C.

"Got a crop of April honey from broadleaf maple—the first of the kind ever."—J. W. Ware, Pierce County, Wash.

"The honey crop will be a failure, or nearly so in this part of Iowa this year."—A. B. Claus, Buena Vista County, Ia.

"Cold and rainy most of the time. Frost on June 20. Forage is good, but bees are losing time."—F. A. Carrier, Bennington County, Vt.

"The lumberman and beeman should be friendly all their lives; For one of them has shingles while the other has the hives."—Strickland Gillilan.

"Frost has just hit us hard in New England, with clover, verburnum, and elder out, but little coming in."—Robt. Elwell, Bristol County, Mass.

"Bees are doing fairly well here. Combs filled up below and are working nicely in the supers. Average yield of honey is expected."—J. W. Seybold, Nicollet County, Minn.

"California raised and shipped 500 cars of honey last season, and in Pennsylvania our possibilities are just as great."—State Apiarist Green of Department of Agriculture of Pennsylvania.

"Season a complete failure in this locality—too dry. Have not heard of a single swarm and am afraid a good many of my colonies will have to be fed for winter."—Alex. Cruikshank, Vancouver, B. C.

"Last winter was an open winter here, bees flying nearly every day. The result was consumption of more stores than common and colonies weaker in the spring than usual. Colonies had so many bees in the fall

BEES, MEN AND THINGS

(You may find it here)

after honey was taken off that they would hang out as if they intended to swarm. Colonies started from two frames of brood in August last year went thru the winter nicely."—C. H. Ponting, Benton County, Wash.

"Honey crop to date is far below normal due to the heavy winter losses and the severe drouth which prevailed thruout May and June, doing great damage to the clovers."—C. Schoonover, Scioto County, O.

"I have 33 colonies and they are doing fine. Some have made about 75 pounds of clover honey, with basswood now in bloom and buckwheat yet to come. I expect a good crop."—A. B. McHenry, Columbia County, Pa.

"The prospect is that the bees in this country are not going to live, as it is so wet and cold that they are starving, and it will be perhaps years before I can purchase any more around here."—Walter F. Whipple, Orleans County, Vt.

"The greatest honey flow in years. First, white clover; then, red clover; and now sweet clover will hold till the fall flow comes. My loss last winter was heavy, but my colonies are now very strong."—R. L. McCoy, Spencer County, Ind.

"Last year I got 25 sections of white honey completely filled and a five-gallon crock full of chunk honey. But three bears came in one night and ate the honey, brood, and bees, leaving me one hive out of three."—G. B. Anlenbach, Jefferson County, Pa.

"I should like to inform you that as our big guns here could not determine European foul brood they have had to send samples to Dr. E. F. Phillips at Washington, who has declared European foul brood to exist in this country."—T. E. Wise, Cradock, South Africa.

"I run three bee yards, having 250 colonies in all. I have a Ford car for the out-yard, make my own foundation, requeen from my own stock, but buy new blood now and again, and do everything single handed connected with the apiaries."—C. Smedley, New Zealand.

"Our bees are established near Chico, Calif., this season, where we hope to secure a crop of honey from the yellow star thistle. It is a late-blooming flower, and the nectar flow from it has only just begun; but is said to bloom until frost stops it."—C. D. Stuart, Butte County, Calif.

"I have about 30 odd hives located in four different parishes, and so far have not seen a capped cell of 1918 honey. I am constrained to admit that my State, or, at

least this part of it, can not rank high as a honey producer. Our chief pest, the Argentine ant, can annihilate a colony within a day or two. I made about 1,500 pounds of honey last season, mostly after July, and there was practically no spring flow that year either.''-Sam Houston, Orleans County, La.

"We have been properly euchered this season by the middleman. He got the oyster and we got the shells. I do not mean myself particularly, but practically the whole fraternity was taken down."—Major Shallard, New South Wales, Australia.

"Notwithstanding the magnificent start we secured from bees in April, with weather conditions in May and June such as broke all records for dryness, the honey-crop prospect went a-glimmering. Nearly all beekeepers have moved their bees to the mountains. Reports from those districts are that fireweed is good and a fair crop promised.—E. J. Ladd, Multnomah County, Ore.

"The Food Administration regrets its use of the words 'honey manufacturers' in connection with our sugar regulations. In reply to your favor of July 6, I would like to call your attention to the fact that we have changed this to read 'beekeepers.' Beekeepers are entitled to their normal requirements of sugar, and certificates for its distribution may be obtained by applying to the Federal Food Administrator for the State in which the beekeeper does business. Please be assured that the Food Administration appreciates the co-operation it has received from the beekeepers of the country, and from such publications as yours."—U. S. Food Administration, Educational Division, in a letter to Gleanings in Bee Culture, dated July 9, 1918.

"At the last annual convention of this Association, \$50 was voted to make a display showing the uses of honey in canned fruits and baking, and the uses of honey in sweetening, at the next Wisconsin State Fair, Sept. 9 to 14. A part of the fund will be used in distributing receipts of same to those interested. There will also be displayed demonstrations of beekeepers' supplies at the Fair. A building has been set aside for the exhibits and demonstrations of the bees and honey department. Premiums in the bee and honey department, as offered, amount to \$449.00. N. E. France of Platteville is superintendent, and A. C. Allen of Portage is judge."—From circular letter to Wisconsin beekeepers, sent out by the Secretary of the Wisconsin State Beekeepers' Association.

"Sweet clover is a benefactor of man and should never be destroyed as a 'weed.' It is the best of our honey plants. If there were no other reason why it should be spared, that would be sufficient. But today the farmer who formerly made war on sweet clover as a nuisance is fast learning that it

is a blessing, and there is no more beneficial scientific agricultural propaganda than that which teaches the virtues of sweet clover and encourages its use. It will restore impoverished soil, redeem abandoned soil, and create good soils where there was no soil of any value before. While doing this it furnishes a crop that is excellent stock feed; it furnishes excellent honey; and with its long tap root it persists thriftily even thru the dryest of unfavorable seasons. However, it is distinctly ornamental, while the fragrance of its blossoms, which gives it its name, and with which it subtly charges the air, is delightful. Tons of it have been sacrificed in Louisville the past few days in the weed-cutting crusade, for few property owners understood its value and the weed cutter when he swings his indiscriminating scythe doesn't know it from any other weed. More's the pity."—The Louisville Courier-Journal, June 26, 1918.

"Why doesn't some genius in the 'Home of the Honey Bee' produce a stingless bee? Isn't it possible to secure the assistance of Burbank for this purpose? Unfortunately my anti-sting armor has all proved vulnerable except the 'globe' veil. In a recent bee offensive something went wrong in the early stage of the operations. The battle cry evidently was passed along the line and I found myself surrounded by angry bees which stung me thru my thick trousers and thru A. I. Root's sting-proof gloves. I beat a hasty retreat to prepared positions in the cellar and called for help. These bees are intelligent—no question about that. Not a member of my family could go anywhere near the hives all day Sunday or Monday, the battle having started Saturday. The bees had an advance guard out in the driveway and succeeded in stinging several members of the family as well as the dog, two days after the main encounter in which I was the first in command. The famous Root bee-smoker had no more effect on these bees than so they had been equipped with gas masks. The general engagement was brought on by my attempting to capture a swarm, and, contrary to all A B C rules of bee culture, this particular colony from which the swarm issued had plenty of room and had produced no honey. I wish I had just 10 good, common-sense, fundamental rules for amateurs to follow to make honeybees produce honey. After reading Gleanings and A B C of Bee Culture I am simply bewildered and appear to have nothing definite in the way of fixed rules of warfare."—Corwin McDowell, President of Eastern Casualty Ins. Co., Boston, Mass. [If you would be a little more painstaking and carefully extract the bees' stingers before manipulating them, it might help some. The only stingless bees known have the cheerful habit of fastening on to the individual hairs covering one's body and pulling these out singly and in the longest-drawn-out and most painful process possible.—One of the Editors.]

THIS month is not a particularly busy one for the small beekeeper, and therefore about the only subjects that need claim our attention are requeening and robbing.

Vacation Time.

The work of extracting will probably be over by the first of August, and the first half of this month would therefore be a good time for a short vacation, which may be taken with a clear conscience as far as the bees are concerned, that is, providing instructions have been followed and all colonies kept strong.

Selling.

The subject of selling the honey hardly needs discussion since, under present conditions, honey sells itself. We only caution that a close watch be kept of the honey market and that sales be made in accordance. We are not urging excessive prices, but those somewhere near commensurate with the prices of dry goods and groceries for which the returns will be spent. The man who sells to a profiteer that doubles his money is more foolish than patriotic.

First Step in Wintering.

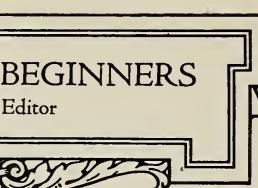
Some time during the latter part of August should be taken the first and most important step in preparation for wintering, the raising of young bees to withstand the excessive cold of winter. Unless the queens are young, we would strongly advise requeening (see page 462). Young queens introduced at this time will lay many more eggs than the older queens, and in a few weeks' time there will be considerable brood. Since the eggs will develop into field bees in five weeks' time, there will be, by October, many new field bees that will have a chance for a number of good flights before the advent of winter. The value of these fall flights can hardly be overestimated, for without them the bees are not sufficiently hardy. We have seen many such bees, apparently normal, yet doubtless lacking in vigor, being pulled out at the entrances in the late fall. This taught us the value of raising our bees a little earlier, beginning in August rather than September.

Robbing.

After the main honey flow, and especially if a heavy flow stops suddenly, the bees may often be seen scouring the whole vicinity in search of any possible exposed sweets. If the door of the honey-house has been left ajar, or if honey has accidentally been spilled on the ground, the bees are not long in discovering the fact.

Quiet Robbing.

Or, if a colony is weak, and perhaps queenless, and therefore more defenseless, black shiny robber bees, which are in many cases devoid of "feathers," may be seen enter-



ing the hive and soon departing with their loads of honey. This quiet robbing usually develops in a short time into a regular uproar, such that the robbers at-

tempt to gain entrance to about every hive in the apiary.

Bees at Play.

Along thru the middle of a warm day or early afternoon, many young bees may be seen at play flying all about the entrance, and making such a commotion that at first glance one might think robbing had started, but a closer observation will show no old robbers, no fighting, sneaking, nor challenging of entering bees. This unusual activity is simply the young bees taking their first flight, circling about in front of the entrance and carefully marking their location.

How Robbers Enter Hives.

When robbers are present they may be seen hovering about an entrance watching the sentinels that are stationed there to prevent intruders from entering. Suddenly a robber will dart and dash past the guards, attempting to enter; but its guilty behavior is so marked that some alert sentinel generally pounces upon it and challenges its entrance. While the sentinel holds tightly to the robber, other bees come to the rescue, and the robber is soon driven clear out of the hive, and perhaps stung to death.

Experienced robbers sometimes become very skillful in entering other hives, and seemingly assume an nonchalant air, entering as if they rightly belonged there. Such behavior usually gets them past the guards all right; but even after they are in the hive, loading up with honey, there is still a chance that they may be captured and stung by the bees.

Detecting Robbers.

Besides the high humming note of robbing bees, and the unusual commotion in front of the hive with occasional shiny bees having their entrance challenged, and perhaps two or three bees whirling about in their struggles here and there on the entrance-board, one may also detect the presence of robbers by crushing one of the bees found running up the front of the hive before taking its flight, and noting whether or not it is loaded with honey; for unless the bees were robbers or swarming bees, they would have no load when leaving.

A Bad Case of Robbing.

If the robbing is allowed to continue soon a loud, high humming is heard, and the air becomes filled with thousands of bees darting with great rapidity in straight lines to and from the source of honey. Other bees now hear the uproar, and speedily join in the mad scramble for wealth until entrances, hive-covers, and about everything in sight is covered with angry, fighting bees

curling up and stinging each other furiously; and woe to any living being that may then appear on the scene of action. It will require many gifts of honey to sweeten up the neighbors after such a fracas. And even such an inducement may be without avail, if the neighbors or their stock are badly stung.

Damage Done by Robbers.

Considerable damage may be done to an apiary by allowing robbing; for colonies that have once robbed are more likely to repeat the performance, and the next time the beekeeper may not be present.

Unless such robbing is stopped, the bottoms of many of the hives and the ground in front will be covered with dead bees and particles of wax that the bees have torn from the combs in their frenzied snatching of stolen sweets. And not only the weak colonies but also some of the strong ones may be destroyed in a few hours, every bee in such a colony being killed and every drop of honey removed. The brood, too, will probably become chilled, since there are no bees left to cover it. Thus there will result the loss of the entire colony. Should it happen that a colony is about all killed before the robbing is discovered, the bees should be shaken off and the brood distributed to other colonies in order to prevent it from becoming chilled.

To Prevent Robbing.

The greatest trouble from robbing usually occurs right after the main honey flow. For this reason we have already especially cautioned that extra care be taken when removing the honey from the hives. With the exception of the contracted entrance, every crack and crevice of the hive should be securely closed so that not one bee may gain access; and if thru accident any honey is spilled on the ground or hive, it should be diluted with water, and all traces of the honey removed before the bees can obtain a first taste of the sweets. Also, if it is necessary to remove any combs from the hive, they should be placed in an empty super and immediately covered with cloth.

As previously mentioned, the windows of the extracting-room should be screened. But a wooden instead of a screened door should be used, since the odor of the honey so readily passes thru a screened door that clouds of bees would hang about the door, only waiting a chance to dodge in.

To allow honey to drip from the lower end of a solar wax-extractor is also an easy way to start robbing.

After the combs are extracted, some beekeepers pile them six or eight high, leaving at the top and bottom only an opening large enough for the admission of one bee at a time, thus allowing the bees to rob out the honey still sticking to the combs. If no disease is present in any colonies of the neighborhood, and if only slow robbing is allowed, probably the plan would be satisfactory; but it would, perhaps, be a little safer to place the supers of sticky combs, three or

four in a place, over strong colonies that will readily clean them out. Between the combs and the brood-chamber below should be placed an escape-board having the bee-escape removed and the opening covered so that only one or two bees may pass thru at the same time. This plan usually works, tho there are occasional exceptions.

During a dearth of honey, colonies should be opened as little as possible, and not very much smoke used, as the bees are more defenseless after being smoked. All colonies should be kept supplied with a queen and brood, and all weak ones should be left with contracted entrances, and with no more combs than they can easily cover. If it is absolutely necessary to work when the bees seem inclined to rob, a cheese-cloth or netting bee-tent, just large enough to place over the hive and manipulator, may be used.

How to Stop Robbing.

Italians put up a much better defense than blacks; and, if attended to at the



This is a strong colony of bees, with its guards out in force, ready to repel any attack of robbers.

start, it is usually easy to stop robbing among Italian bees.

In mild cases of robbing, the entrances should be contracted; and over the fronts of the hives that are being robbed grass should be thrown loosely and kept dampened.

If a colony seems quite unable to defend itself, it should be placed in the cellar for a day or two, and a hive containing a small amount of honey left in its place. As soon as the robbers have used up this honey they will quiet down; while if no honey were left in the place they had been robbing from, they would begin robbing from a neighboring hive.

When only one colony is doing the robbing, perhaps about the easiest and best way of meeting the difficulty is to change places with the robbed and the robbing colonies.

I HAVE been in the habit of giving occasionally in these columns kind words from some of our readers. Once or twice I have permitted something extravagantly kind to appear. Now, to be fair I should also give place, at least once in a while, to some of the criticisms. So far as unkind words are concerned they are very few. Along this line just two letters have been received in regard to what I said about cigarettes and testaments on page 389 of our last issue. One of the letters said that the soldiers who are offering their lives to protect our liberties and our nation "should have everything they want." I have mislaid the letter, but here comes a second one along the same line:

Mr. Root:—Noting your article in July GLEANINGS on cigarettes and testaments, I wish to say I have many times wished to be where I could have a good long talk with you—one where plain and sharp words would show you and prove to you what you really are but are not sensible of it. Those who have gone forth to fight for such as you and all others, if they want cigarettes they should have them. If they ever were entitled to them they are now; and if a man or a woman, as to that matter, is clear spiritually, cigarettes will not in any way make such impure.

But men of your caliber are always interfering and reforming almost all innocent things while upholding and practicing things thousands of times worse and not comprehending it. In fact, you are of those who strain at a gnat and swallow a camel; and your favorite diversion is showing your readers "unknowingly on your behalf," how blind, selfish, and hypocritical you are.

Perhaps at one time you were an industrious and useful producer for the world's good; but now you fail to realize that you are only a non-producing parasite, living off the toil of hireling slaves whose surplus profits above their wage you are spending on self only by playing at "intensive" gardening, electric automobiles, electric windmill generators, estates in Florida, and expensive trips back and forth—deluding yourself into believing you are doing something useful, and not being sensible of its being the contrary. And I wish to add just this much more:

That Almighty God is able to and does reach unto all those he wishes to teach and to lead unto righteousness, and has absolutely no use for your help. There be some blind yet who cannot perceive the spiritual teachers; therefore they turn to material ones of your caliber who keep their backs always turned to the light of true godly righteousness, and following man-made doctrines which are a Babylon of confusing sects and creeds, leading the careless into everlasting darkness and sorrow because they do not seek right.

Princeton, Mo., July 3. J. F. J. SAFARIK.



Know ye not that your body is the temple of the Holy Ghost which is in you, which ye have of God, and ye are not your own?—I. COR. 6:19.

Whoso shall offend one of these little ones which believe in me, it were better for him that a millstone were hanged about his neck, and that he were drowned in the depth of the sea.—MATT. 18:6.

seems to me, both judge and jury. You say, "If they want cigarettes they should have them." Why not go on and say the same thing about "booze?" And it just occurs to me that Germany would likely fall right in with your suggestions. I can imagine that even the kaiser himself might say something like this: "Why, yes; if the boys want cigarettes, let them have them of course, and booze also, which would give them courage to fight. And right along this line why not abolish the war zone around the soldiers' encampments? Sure thing; let them have anything they want."

I wonder, friend S., if it has ever occurred to you that I have heaps of magazines and periodicals from all over our nation, constantly piled on my desk. Of course I cannot read them all; but I try to glance over them enough to keep fairly well posted up to date. I fear a good many people are getting the idea that there is something patriotic about smoking a cigarette, especially since cigarettes have been sent in such quantities to the soldiers. And speaking of patriotism reminds me of something else along this line. Quite recently when a lot of soldiers were getting off a train a crowd of women (I believe they called themselves *girls*) rushed up to kiss the soldiers, thinking it would be accepted as a patriotic act; but it was not long before the authorities put a stop to the kissing. This gang of women that wanted to kiss the soldiers were not exactly girls, and I am afraid they hardly deserve to be classed as women, notwithstanding their gaudy attire. Should we say of them, as you have just said of the cigarettes, "if the soldiers want them they should have them?" May God be praised that Uncle Sam steps in right here and objects.

The American Tobacco Co. is, of course, alive and on the alert along this same line of "patriotism"; and a magazine* that lies

*No-Tobacco Journal, Butler, Ind.

My good brother, while I thank you for wishing you could have a good long talk with me, I am a little afraid you would have to climb down a little from the high perch you seem to have chosen while you lay down the law, making yourself, as it

before me says they have advertised they are going to furnish the Government 100 carloads of tobacco. I do not know how much of this is to be used for rolling up into cigarettes; but the inference from their advertising is that the Government is going to *give* it to the soldiers. But the editor was not satisfied, and on April 23 he wrote to a member of the House of Representatives, Washington, D. C. A reply came promptly:

In no instance has the Government given the soldiers any tobacco; but they have so arranged that the men "over there" can have the American tobacco to which they are accustomed, and at a reasonable price.

Sincerely yours,

LOUIS W. FAIRFIELD.

Congressman from 12th Dist. Indiana.

A few Sundays ago at the big class in our Sunday-school in Florida our superintendent, E. B. Rood, spoke something as follows, after cautioning the boys about cigarettes:

"Can anybody tell me whether the President of the United States uses tobacco?"

As nobody seemed ready to answer he replied:

"Our good President has never used tobacco in any form. Did his predecessor in office use tobacco?"

The answer again was "No." And finally he explained that no President has used tobacco in any way or form until we get back to Grant, and it was the tobacco habit that *killed him*. He added that the probability is that very few of the men chosen for the presidential chair ever used tobacco. Is there not something significant in this? Once more:

How many of our large manufacturing concerns in the United States would give employment to a young man or boy who would come with a cigarette in his mouth? In the journal I have quoted from I find a letter from a soldier replying to the editor about cigarettes in the army. It is to the effect that a lot of the boys had broken off from the use of cigarettes just because they soon found that they interfered materially with their efficiency in drill.

Just a word about the "hireling slaves" this brother alludes to. Perhaps he will be surprised to learn that these "hireling slaves" of ours are, many of them, and I do not know but I might say *most* of them, running automobiles that cost two or three times as much as the one your friend A. I. Root uses. In fact, the one in Florida is a second-hand Victoria refinished. The one I am using (and rejoicing in) today after being refinished and refurbished throughout cost only \$300. I got it at so low a cost because they did not guarantee the batteries; but the first trip gave me 62 miles

with one storage of the battery. I go down to Florida every winter because a competent physician says that at my age my chances of life are very much better where I can use my hoe and hand cultivator out in the open every day of the year. Am I, *really* so "blind," "selfish," and "hypocritical," after all?

CANNED ELECTRICITY.

Since you have made special mention of the electric windmill, I have thought best to submit what so great an authority as the *Scientific American* says about it in their issue for June 29:

WINDMILL DRIVE FOR THE ELECTRIC CAR.

Mr. A. I. Root, the beeman of Medina, Ohio, whose hobbies include an electric automobile which gets its current from a windmill, reports that he is making much progress in this matter. He has been able to charge his batteries to a point where his car ran 62 miles without recharging. He confesses, however, that this is the exception; ordinary winds will not charge to the full capacity of the batteries. Mr. Root is not sure that his initial and operating costs are yet such as to put the thing on a commercial basis, but is confident that windmill drive for the automobile will be a feature of the rural life of the future, and that it will have a development quite parallel to that of electricity canned from water power.

Good friends, is not that an achievement in the way of telling a little in a very few words—particularly that closing paragraph about "canned electricity?"

A few words is closing in regard to the second text:

As long as men continue using cigarettes, young boys are almost sure to use them in *spite* of the law; and our best up-to-date physicians agree, I think, in declaring that it is harder work to break off the habit of smoking cigarettes than to give up strong drink. There are many testimonies from reformed men who have gone thru the trial, both with intoxicants and cigarettes. Our own State of Ohio has a very just law in regard to selling or giving away cigarettes to boys under a certain age; but since cigarettes have been sent in such quantities to the soldiers it proves a double attraction to the boys. First, they see men smoking them; and as they are "little cigars" they look just as if they were made for the small boys to copy, as far as they are able, their fathers.

Secondly, since there is so much said about sending cigarettes to soldiers in the army, the boy, as a matter of course, wants to be patriotic, and thinks it is a fine thing to copy the soldiers on a small scale.

About ten miles from where I sit writing is a great onion farm. During this vacation time in the schools the children are offered big prices, girls as well as boys, to weed onions. A full truckload of these

children go from Medina out to the onion farm every morning, and back at night. Well, I have just been informed that this gang of boys and girls are all, or pretty much all, smoking cigarettes. It is the latest thing out, you know; and even if they are told that it is against the law of Ohio, that seems so far to make it, only the "more interesting," to the juveniles. Below I submit a copy of the law:

SECTION 12965. Whoever sells, gives, or furnishes to a person under eighteen years of age a cigarette, cigarette wrapper, or substitute for either, or a cigar or tobacco, shall be fined not less than twenty-five dollars nor more than one hundred dollars, or imprisoned not less than two days nor more than thirty days, or both; and for each subsequent offense shall be fined not less than fifty dollars nor more than three hundred dollars and, imprisoned not less than five days nor more than sixty days.

In view of the above, "shall the State of Ohio *continue* the business of growing a crop of fools, idiots, and imbeciles"?

Later.—Today is July 10, and a lot of kind words are coming with every mail. Most of them are in regard to the electric windmill. Here is one, and it comes from a man who uses tobacco too. (Did you ever?) This letter, I think, will do very well to balance the one at the opening of this Home paper.

Dear Friend:—As it only costs three cents I must tell you how I appreciate Our Homes and High-pressure Gardening. As the Lord says, "Give honor to whom honor is due." If it were not for your writings I would not take GLEANINGS, as I do not have time to care for many bees.

While I am a user of tobacco, and do not agree with all your writings, yet you are a good open confessor of your evil thoughts, which will in the end help us all to take an account with ourselves and do better.

I am glad you have invested money in your electric apparatus; for of what use is money if we do not spend it? and by your doing this act (even if there is no profit in it for you) you have benefited the world. There was no profit to Columbus nor to the queen of Spain in discovering our great land; but it is beyond computation what it has profited millions of us; and the great millions that will be made with electric devices after you and the rest of us are gone would likely amaze us if we were to see them. By and by tell us the cost of your apparatus. The earth and the fullness thereof are the Lord's, and all that we possess; for when our souls are required whose then will they be?

THOMAS HARRIS.

New Florence, Pa., July 8.

The electric windmill complete, cost, I think, about an even \$500. The freight on it from North Dakota to our Florida home, added to paying the inventor to go and set it up for me, made it come up close to \$700. This latter item of expense would not ordinarily be necessary; but I felt anxious not only to see but to have a good visit with the man who planned the invention. Further particulars can be obtained from the Electric Windmill Corporation, Wyndmere, S. D.

G. M. DOOLITTLE.

SOME RECOLLECTIONS IN REGARD TO HIM.

Their works do follow them.—REV. 14:13.

The *American Bee Journal* was first started in January, 1861, and continued one year. At the breaking-out of the war, and perhaps for some other reasons, it was discontinued till July, 1866. In August, 1865, my attention was first called to bee culture, as I have mentioned many times, perhaps. I have told you how I greedily hunted up everything in regard to bee culture, ransacking old foreign periodicals, hunting up Mr. Langstroth, and finally getting in touch with Samuel Wagner, the editor of the *American Bee Journal*. After procuring all of volume 1, perhaps largely thru my solicitation he started the journal again. From that time on I read every word of it, much of it over and over, and soon got in touch with the beekeepers, especially the successful ones, not only of our own land, but as far as possible, with those of the whole wide world. I can not tell exactly when Doolittle commenced writing as well as myself for the journal. Unfortunately our files are missing for the last half of 1869. In that year and in 1870 Doolittle furnished five different articles. In the same volume, under the name of "Novice," I furnished 13 different articles; and from that time on, until GLEANINGS was started in 1873, Doolittle and I had more or less to say in every number of the *American Bee Journal*. In order to get track I have run over those old volumes; and it has freshened up my memory to such an extent that it seems as if I had been meeting face to face the dear friends of almost fifty years ago. There were Henry Alley, Charles Dadant, Doolittle, Gallup, Adam Grim, Peabody, and the Rev. L. L. Langstroth. Then there was a long string of others whom it would take too much space to mention.

Doolittle's first article for GLEANINGS appeared on page 71 of our issue for August, 1873. As the report is short we give it entire:

I have got off 1600 pounds of box honey, which I have sold for 25 cents per pound. Extracted sold for 14 cents. I have also worked another small apiary for half of the honey (box honey), from which I have taken 900 pounds. I have also worked a 150-acre farm with the help of one man, and, to tell the truth, I am nearly worked out.

G. M. DOOLITTLE.

Borodino, N. Y., August, 1873.

You can see from the above that Doolittle was a busy man away back 45 years ago. From that time on I think Doolittle was a regular contributor. If I remember correctly none of the contributors to the *American Bee Journal* were paid anything

for their communications. Our good friend Samuel Wagner explained that it was uphill work to pay expenses, and therefore we volunteered to furnish the articles free of charge which we sent in. It was much a labor of love all around. We were anxious to encourage the business of making our land "a land flowing with milk and honey." Of course the most of us were producing extracted honey, after I told what could be done to save the bees the labor of comb-building. Doolittle, however, astonished us all; and, if I am correct, ran ahead of us all by producing comb honey in quantity almost if not quite equal to the number of pounds we secured by the use of the extractor. Of course I was greatly interested in learning how he did it; and after I had had considerable correspondence with him he was kind enough to pay me a visit. In fact, I am inclined to think he paid me two visits, but I can not be quite sure of this. I wonder if any who may see this can refresh my memory. Well, one great point of his getting such large quantities of comb honey and getting such prices was that he had devised the handsomest and most taking honey-package the world ever saw. The bees built the honey in a peculiar section of his make; and after the bees had finished it straight and true, every cell nicely capped, he placed a little sheet of glass on each side; and when he sent it to market, the whole thing (two sheets of glass and a comparatively heavy wooden section) was all weighed up at the price of honey. I objected to asking people to pay so much a pound for wood and metal; but Doolittle had a clincher on that matter. He said that when his sections were exposed side by side to unglassed sections his always sold first at the same price or even a higher one; and, furthermore, he had never been able to supply the demand; and I have from first to last, as you may recall, said that supply and demand should regulate the price of all farm products.

I can not tell just when Doolittle turned to extracted honey in place of comb; but my impression is that for many years he held to his glassed sections and built up a market and a demand for them, somewhere in the city of New York, I think. Doolittle, as a matter of course, soon became an authority on every matter connected with bee culture. When he and I, as happened once in a good while, did not quite agree, the matter was submitted to the readers of GLEANINGS in a most friendly way; and when the A B C book came out, edition after edition, Doolittle was paid to take plenty of time to go over it;

and wherever we did not quite agree, the matter was submitted to the beekeepers of the world. In a like manner Dr. Miller's notes were also added.

In regard to Doolittle's kind visit I can not tell you just now whether it was before GLEANINGS was started or after; but what a time we did have in discussing different matters, from daylight till dark and even away along into the night! I do not know how it came about, but some way I never happened to make Doolittle a visit; and when the news of his death came I said to myself, "Oh! why did I not make that visit before he was called away so abruptly?"

Our departed friend was an earnest Christian, first, last, and always. He was alive and on the alert on prohibition and temperance. Sometimes he went even further than I did, as his valuable articles on temperance (as well as bee culture) in the back numbers of GLEANINGS attest.

Doolittle is gone; but in the language of our text his works and his writings will bless humanity for ages to come. As I was going over the back volumes of the old *American Bee Journal* I was wondering how many of the veterans are still living. If these words should meet their eyes, I should be exceedingly glad to hear from them. C. P. Dadant and his wife and family paid us a brief visit last winter at our Florida home. We had many a good laugh over the experiences of years ago.

Dr. Miller is still a beekeeper, and apparently as bright as ever, even if he is close to 90 years of age. I wonder if it is not true that beekeepers as a rule live longer than people in other pursuits. There has been some joking in times past in regard to the puritanical habits of beekeepers. At a convention in Detroit a boy set up a cigar-stand in the big hotel, but did not get much patronage. I think he said something like this:

"Why, what sort of people are these 'bee folks,' any way? I have sold only one cigar to the 'hull bunch,' and that was a five-center."

Maybe that is why so many of us live to a good old age. May God be praised for having let such a man live, and live to a good long life, full of good works, as our departed friend G. M. Doolittle.

MISTAKES IN THE PREPARATION OF "OUR DAILY BREAD."

Perhaps never before has there been so much attention given to the matter of food best for health. Even the school children and college students are making it a study. Below is an extract from a letter written

by one of my grandsons, only 18 years old, a student at Oberlin College:

"Why are there so many false teeth nowadays? We Americans take all the minerals out of our flour by making it *white*, all the minerals out of our sugar by making it *white*, all the minerals out of many of our breakfast foods by making them *white*, all the minerals out of our rice by polishing it to make it *white*, all the minerals out of our vegetables by peeling them—like potatoes. Then we wonder

why our teeth (which are made of mineral matter) are not what they ought to be. One of the *first great arguments* in favor of the use of honey is that it contains these highly valuable minerals. In this respect it is away above *white* sugar, and corn syrup, neither of which contains *any* mineral matter. Many people think to make up this loss by drinking mineral waters. *Nonsense!* With the exception of one or two minerals, such as common salt, the body *cannot* use the minerals in mineral water because they are *in-organic*. Wynne Boyden.



HIGH-PRESSURE GARDENING

NEW POTATOES BY "FOURTH OF JULY."

For almost if not quite 70 years it has been my ambition to have new potatoes in our garden by July 4. Sometimes they are rather small, of course; but when put in with green peas, even if they are not larger than hickorynuts, we find they are almost equal to the peas, and they do not cost a quarter as much money or time and work, as a rule. Well, what brings the matter vividly to mind just now is the fact that on the day before the 4th of July potatoes were retailing at our family grocery at 90 cents a peck. They did not have any old potatoes—in fact, had not had any for two weeks*—just those new potatoes grown down in Florida, and shipped all the way up to Cleveland, and then from Cleveland down to Medina, adding freight and profit all along; and when they arrived at Medina it was 45 cents for half a peck, and this when every man and woman and almost every child could have planted potatoes right here in Medina so as to have beautiful nice potatoes for cooking at almost no cost at all except a little work out in the garden.

Of course, the weather has something to do with it, but we did not get here from our Florida home until Apr. 20. About the first thing I did was to get some Six Weeks potatoes out of the cellar, where they were sprouting nicely, to plant, and get them in the ground, even if the weather was cold and wet. We planted a few right away, and then got the ground in better condition for the planting later on. Well, those I planted about May 1 are now furnishing beautiful potatoes, larger than hens' eggs, if I go about from hill to

hill and look carefully to find out where the ground is being pushed up by the beautiful tubers. Some of our children say, "Why, father, it is a big waste to dig potatoes when they are only half grown." But, bless you, we do not dig the whole hill. We just go along and pick out the largest ones, and the disturbance to the rest of the hill does good rather than harm. By the way, I do this work of getting a nice potato here and there with a big enameled spoon; and this spoon I keep hanging on a nail right handy, and I use it almost as much as I do my hoe. When you get used to it you will find it nicer than any trowel to dig around plants, and I think it is handier.

Well, how about the high-pressure potato-growing pictured in our July number. These we did not get started quite as early, but they were put in the bed (pictured) somewhere about May 1; and it was about four weeks before we had our ground ready so we could transplant them, and they too were ready to furnish potatoes by July 4, but not quite as large. Now, here is one point:

I have spoken about buying potatoes by the half-peck, even if it is many times good policy to buy enough ahead so as to get something like wholesale prices. But when there is a great chance that prices may go down, and go down *suddenly*, it is both prudence and policy to buy a little at a time, and that is why we have bought so few at a time. You may have noticed that about the first week in July, when home-grown potatoes come into the market, the price may drop almost a half within 24 hours.

Years ago a grocer here was out of potatoes, both old and new; and one rich patron told him he wanted some potatoes, no matter what they might cost. Accordingly the grocer sent word to me that he would give me an awful price—I do not remember what—for half a bushel of new

*By the way, the *American Issue* tells us that two million bushels of potatoes in the hands of the farmers up in Wisconsin were allowed to rot because it was impossible for the railroads to furnish cars to ship them where they were wanted. Yet at this very time the city of Milwaukee was sending out four train loads—*train loads*, mind you, not carloads—of *beer* every 24 hours.

potatoes if I could furnish them. So I hastily dug up some about half grown—enough to fill his order; but by the time my half-bushel reached the grocer some enterprising farmer had come into town with a load of nice potatoes, much better than mine, that he offered at half the price, or even less, than I was to get. When articles of food are steadily advancing, and you have good reason to think they will continue to advance, it may, of course, be policy to buy ahead; but look out when the market is dropping or is liable to drop.

Now, the moral to all this long story is to plant a few potatoes every spring, no matter if the weather is not just to your notion. Plant a few at least, in anticipation of the time when no potatoes are to be had at the groceries except those grown down in Florida and sent all the way up north, as in the instance related above. And I hardly need remind you again that the same or a similar short cut between "producer and consumer" can be maintained by the good people down in Florida.



TEMPERANCE

DRY TERRITORY FOR THE CANTONMENT; DOES IT PAY?

We clip the following from the *Cleveland Plain Dealer*:

Prof. William J. Hutchins of Oberlin Graduate School of Theology, religious director for the past year at Camp Sheridan, Montgomery, Ala., told members of First Congregational Church yesterday morning that the army camps in the southeast are as clean as any in the world.

"There are evils in the camps—men's evils," said Prof. Hutchins, "but men who never made victorious fights against vice before entering the army are doing that today, aided by the excellent morale and surroundings.

"For five months I was with 450,000 enlisted men, and in all that time I saw only one drunken man. That is not a tribute to the virtue of the soldier so much as it is to the wisdom of the War Department in putting their cantonments in dry territory and to the vigilance of the military police."

"AND THERE SHALL IN NOWISE ENTER INTO IT ANYTHING THAT DEFILETH." ETC.

The following is clipped from the *Rural New Yorker*; but the heading above seems to fit Friend Collingwood's suggestion to a dot:

Step by step the government of this nation is building a barbed-wire fence around a "bone-dry" pasture and driving the entire herd of intoxicating liquors outside. The state of Idaho enacted a law which prohibited any one from keeping liquors for his personal use. This law was attacked on the ground that the state has no right to interfere with personal liberty in this way. Now the United States Supreme Court, through Justice McReynolds, settles the point. He says:

"The state has power absolutely to prohibit manufacture, gift, purchase, sale, or transportation of intoxicating liquors within its borders without violating the constitution. We further think it clearly follows from our numerous decisions upholding prohibition legislation that the right to hold intoxicating liquors for personal use is not one of those fundamental privileges of a citizen of the United States which no state may abridge. A contrary view would be incompatible with the undoubted power to prevent manufacture, gift, sale, pur-

chase, or transportation of such articles—the only feasible ways of getting them. An assured right of possession would necessarily imply some adequate method to obtain not subject to destruction at the will of the state."

This may jar some distinguished citizens who have long considered it a "fundamental privilege" to hold liquor in their homes or in the selves! In New York state hard cider is now classed as intoxicating liquor—which it surely is!

Now, reader, you are prepared to turn to the last verse of the next to the last chapter of the Bible and read the whole gracious promise to all who "love righteousness and hate iniquity."

"AND NOT UNTIL THEN."

We clip the following from the *Ohio Messenger*. As you will notice, it is simply an endorsement of what I have for some time back been saying over and over again.

Mr. Hebson, in answer to the question "When will the war end?" replied: "It will end when we win, and not until then. We shall begin to win when America and the allies go dry, and not until then."

From the *Cleveland Plain Dealer* I clip the following from Dr. R. H. Bishop, Commissioner of Health of the great city of Cleveland. Probably we have at present no higher authority on the matter of health.

BURNING UP HEALTH.

Americans who smoke burn up \$1,200,000,000 every year. Not only that, but they burn up their health as well. Tobacco is a drug (that's why it makes the small boy sick the first time he uses it); and altho the human body can become accustomed to its use, as it does to many other drugs, it suffers harm in time.

Smoke too much—and who can tell when they are not smoking too much?—and sooner or later you will be troubled with acid dyspepsia, insomnia, catarrh, trouble with your heart, and even blindness.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Choice clover honey in new cans. VanWyngarden Bros., Hebron, Ind.

FOR SALE.—New crop clover extracted honey, 20c per pound; 2 60-lb. cans to case. H. G. Quirin, Bellevue, Ohio.

FOR SALE.—20 barrels of tupelo and gallberry honey, fine quality, in one barrel or more shipments, at 25c per lb. f. o. b. Ludowici, Ga. A. Nish.

FOR SALE.—To the highest bidder, my crop of white clover extracted honey, from 300 colonies bees. Purchaser to furnish containers.

L. S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE.—3,000 lbs. of fine clover honey extracted from combs having no brood, cased doubly in 60-lb. cans, 25c a pound.

A. S. Tedman, Weston, Mich.

HONEY.—New crop clover and raspberry honey in new 60-lb. cans, two in a case, 25c a pound. Large sample for 25c in stamps.

J. B. Holopeter, Rockton, Pa.

FOR SALE.—Our new crop honey, clover-basswood, blended by the bees on the hives. One of the best lots on the market. It is packed in new 60-lb. tin cans, two to the case. Sample 25c to be deducted from first order.

D. R. Townsend, Northstar, Mich.

HONEY AND WAX WANTED

Small lots of off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

Comb honey wanted. Address 153 Box 323, White Plains, N. Y.

WANTED.—Comb and extracted honey. J. H. Taylor, Parksville, N. Y.

Cash at your bank for carlots and less of comb and extracted honey. Wesley Foster, Boulder, Colo.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares. Superior Honey Co., Ogden, Utah.

WANTED.—Light extracted honey, state price f. o. b. your station. I. J. Stringham, Glen Cove, N. Y.

WANTED.—Extracted honey to exchange for honey cans and bottles in all sizes. Write your wants to D. H. Welch, Racine, Wis.

WANTED.—Comb and extracted honey, car lots and less. Mail sample, quantity and price. W. Morris, Yonkers, N. Y.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

We are in the market for honey and beeswax. Send your best price on comb honey and a sample of extracted honey. State quantities you have, also style, size, and weight of package or section. Charles Israel Bros. Co., Inc., 486-490 Canal St., New York City.

WANTED.—Extracted honey, carload or less quantity. We can supply 5-gallon cans for your crop if needed.

Hoffman & Hauck, Richmond Hill, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 36c cash, 38c trade. We will pay 1 to 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival.

The A. I. Root Co., Medina, Ohio.

FOR SALE

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FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

SEND TODAY for samples of latest honey labels. Liberty Pub. Co., Sta. D, Box 4E, Cleveland, Ohio.

FOR SALE.—300 boxes extra good second-hand cans at 65c per box of two cans. Manley Bros., Sandusky, Mich.

Beekeepers, let us send you our catalog of hives, smokers, foundations, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

Pennsylvania Distributors for Root Bee Supplies, save time and transportation expense on all standard hives, sections, etc., at catalog prices.

Prothero, Bailey & Goodwin, Dubois, Pa.

FOR SALE.—Tame rabbits, any color or number. Breeding stock, 4 to 5 months old, \$2.00 per pair. Prompt shipment. Order now.

George Tebbe, Dow City, Iowa.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (Note new address.) Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—100 8-frame bee hives with sections, in good condition, \$1.50 each; 400 supers, 8-frame, at 40c each and 10-frame at 50c. Write L. Becksted, 11 Opera House Blk., Watertown, N. Y.

HIVES.—Lot of ten standard Root dovetailed, 8-frame, 1½-story comb-honey hives. New goods, nailed and painted with reversible bottoms, metal covers with inner cover, frames with starters and supers fitted with two beeway $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$ sections, everything ready for the bees. Price \$4.00 each, the lot for \$36.00. A beekeeper going out of the business offers these at less than catalog price. J. B. Holopeter, Rockton, Pa.

Buy a milk goat. I have a few left for sale. One 3-yr. old $\frac{1}{2}$ Nubian buck, \$30.00; 3 $\frac{1}{2}$ Nubian buck kids, each, \$25.00; 3 Grade Nubian doe kids, each, \$20.00; 1 3-yr. old $\frac{1}{2}$ Nubian doe, \$35.00; 1 yearling past $\frac{1}{2}$ Nubian doe to kid soon, \$35.00; 2 Saanen grade does, each, \$25.00; 1 native doe, \$15.00. All particulars and photos sent if interested.

R. M. Collins, 630 So. 22nd St., Muskogee, Okla.

WANTS AND EXCHANGE

Bees in exchange for good So. Florida farm land. Fine location for bees, over 10,000 acres in oranges. A. L. Hefinger, 1532 Olivewood Ave., Lakewood, O.

WANTED.—Ten or twelve-inch medium brood foundation mill. Good condition. Address

The Kooeshaw Unity, Inc., Estero, Fla.

Our Food Page—Continued from page 478.

or more sections and transfer to the pieplate with a pancake turner, joining the cut edges. The upper crust may be fitted on the same way. Altho it breaks very easily a little patience will enable one to achieve a very creditable pie.

FILLING.

2 cups raisins	1 cup cold water
$\frac{1}{4}$ cup honey	$\frac{1}{2}$ tablespoons rice
1 tablespoon butter or flour	
margarine	1 tablespoon lemon juice

Mix all together and bake between two crusts. The lemon juice may be omitted and orange juice substituted.

DATE PUDDING.

2 cups milk	3 level tablespoons corn-starch
$\frac{1}{2}$ cup honey	
10 seeded dates, cut small	$\frac{1}{2}$ teaspoon salt
	1 beaten egg

Dissolve the cornstarch in a little of the milk and put the rest of the milk, the honey, dates, and salt in a double boiler. When it comes to a boil, thicken with the cornstarch and cook about 20 minutes. Pour the mixture over the beaten egg, stirring constantly and put back in the double boiler to heat through. Serve cold with whipped cream. Skimmed milk may be used in the pudding in which case add a bit of butter when you put in the egg.

COTTAGE PUDDING.

$\frac{1}{2}$ cup sugar	1 cup sweet milk
2 tablespoons shortening	1 cup rice flour
1 egg	6 teaspoons baking powder
$\frac{1}{2}$ teaspoon salt	1 teaspoon extract lemon or other flavor
$1\frac{1}{2}$ cups sifted barley flour	

Cream the sugar and shortening together, beat the egg, and add the milk and flour, in which the other dry ingredients have been sifted, a little at a time, alternately. Beat thoroly, add the flavor, and bake in a loaf pan in a moderate oven. Serve hot with lemon or any preferred sauce.

BLACKBERRY AND APPLE MARMALADE.

Blackberries Tart apples Honey

Crush the blackberries, cut the apples small and cook equal parts of each together until soft. Measure the fruit and for each cup of cooked fruit take $\frac{3}{4}$ cup of honey and mix well. Cook until it will drip from the side of a spoon in two or more drops, put in sterilized jelly glasses and cover when cold with melted paraffin. Be sure that the paraffin is hot when poured on and tip the glass so that it comes up on the sides enough to make an airtight seal. The marmalade will be of better quality if only three or four cupfuls are cooked at a time.

All measurements level.

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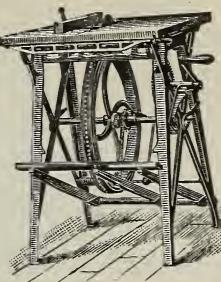
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BOOKS AND BULLETINS

"Transferring Bees to Modern Hives," Farmers' Bulletin No. 961, by E. L. Sechrist. Copies may be received on request made to the U. S. Dept. of Agriculture.

"Reports of the Pennsylvania State Beekeepers' Association," being reports of the 9th, 10th, 11th, 12th, and 13th annual conventions and summer meetings, published by the direction of the Association, has recently come from the press. It is a large booklet of 128 pages. There is a large amount of good bee lore in it, contained in the printed addresses. H. C. Klinger of Liverpool, Pa., is secretary, of whom it may be possible to secure copies of this rather exceptional report.

"Beekeeping for West Virginia," a bulletin of the West Virginia Department of Agriculture, Charleston, W. Va. An elementary work on good beekeeping, and an excellent little text book, by Chas. A. Reese, assistant entomologist and apiarist.

"Honey Bees and Honey Production in the United States," Bulletin No. 685, U. S. Dept. of Agriculture. This is a contribution from the Bureau of Crop Estimates. It is a bulletin seeking to give a census of bees in the United States and by States. It gets right down to figures and tables. The contents include: Map indicating distribution of colonies of bees in the United States; extent of the industry; figures on wintering and losses; yields of honey per colony and total production; exports and imports of honey; honey prices over a period of years; production of 1917; nectar sources; geographic distribution and characteristics of important honeys; etc., etc. It is a bulletin that every progressive, up-to-date beekeeper should get and keep. Write for it to the U. S. Dept. of Agriculture, Washington, D. C.

"The Diagnosis of Bee Diseases by Laboratory Methods," Bulletin No. 671, U. S. Dept. of Agriculture. This bulletin is by Arthur H. McCray, apicultural assistant, and G. F. White, expert engaged in the investigation of bee diseases. Any beekeeper desiring to know how he may surely recognize European or American foul brood, sac brood, or nosema disease, should send five cents for this bulletin to the Superintendent of Documents, Government Printing Office, Washington, D. C. It is a bulletin that should be ready to the hand of every beekeeper.

"Diseases of Bees: Their Detection and Treatment," by H. W. Coley, Connecticut Experiment Station, New Haven, Ct. Dr. C. C. Miller would probably take issue with the first statement in this bulletin giving treatment for European foul brood, which is this: "The shaking treatment combined with requeening the colony with a young Italian queen of good stock is the recognized treatment." But Mr. Coley does also give the simple requeening treatment.

"The Flower and the Bee." Beekeepers especially will be interested in reading a book recently published, entitled "The Flower and the Bee." The author is the well-known John H. Lovell of Waldo-boro, Me., who has contributed many valuable articles to Gleanings and to the A B C and X Y Z of Bee Culture. Mr. Lovell has peculiar qualifications for writing a book of this kind, having been for years a practical beekeeper and an accurate, close, and keen observer of bees and flowers. In addition, the book is written in a popular style, technical terms being avoided as much as possible. It contains many fine illustrations of flowers. The author has much to say on the function of insects (especially bees) and other agencies in the pollination of flowers. He explains that a great number of our cultivated fruits are partially or wholly self-sterile, and, in the absence of bees and other

pollinating insects, these would be entirely barren or nearly so. Bright colors, sweet odors, and varied forms of flowers were not created solely for the benefit of man, for also for the purpose of attracting the attention of bees and other pollinating insects. The importance of cross-fertilization is given particular attention, and instances are related of failures in the raising of some varieties of apples, pears, strawberries, grapes, and other fruits, unless these were cross-pollinated from different individuals and varieties of the same species. In many cases special appliances exist for the securing of cross-breeding, resulting in more vigorous plants. However, there are also many contrivances to bring about self-fertilization in the event of the failure to secure the cross-fertilization. Farmers, fruit-growers, beekeepers, and all lovers of fruit and insect life will obtain much pleasure and information of practical value from the reading of this interesting book. (Published by Charles Scribner's Sons, New York. Price, \$2.00 net.)

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AROUND THE OFFICE

M.-A.-O.

I wouldn't of come to life agin probably only for two or three things happenin' that mightn't a get into print any other ways at all. Then, too, some of my real true friends—the kind that hang on and pull up when a feller's way down—has been a pleadin' with the Roots to let poor old M.-A.-O. have one more chanceet just onceet. The Roots extracted a promise of language reform out of me, and have put on a purty stiff bit onto me, and so I am here again—reformed.

The things that happened are mostly two. Night afore last, just at dusk, our queen rearer's, Mel Pritchard's, son Arlie tried his father's odorless method of picking up by the tail a skunk he found snoopin' around his apiary. That method failed onceet again completely. At such short range a skunk has most of the advantage over a trustin' enemy, especially if he (the skunk) makes a good shot for the eyes of the feller that's man handlin' his tail. When Mel reached his sufferin' son's side, he found Arlie's eyes still stickin' into their own sockets but seein' nothin', and smartin' considerable worse'n red pepper and brimstone. There was a deal of washin' and scourin' of Arlie's eyes right to onceet, also some considerable talk, besides what else filled the air for about a mile in all directions. When Arlie (he's a good Methodist, too) recovered sufficient so he could see a little and think over just what had happened, he remarked to his father that he agreed with M.-A.-O. and Neal Kellogg and that trustin' neighbor that "there's a h— of a lot about skunks that he (Mel) don't know." But Mel is still hanging on to his skunk-tail-hoistin' theory, and says Arlie didn't do it right. Arlie says he did, but that the skunk was irritable or

(Continued on Page 508.)

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Around the Office—Continued

somethin' that evenin', and the trouble always is you can't tell the frame of mind a skunk is in. Mel says you ought always to look at a skunk's eye afore hoistin' him, and see what frame of mind he's in. Arlie says you better look out for your own eye if you do hoist him.

* * *

The other thing happened the same night. It wan't much, only we don't know how much it was, for we didn't hear what was said. But "Uncle Amos" got up during the night some time, and in the dark of his bedroom stepped on a bumblebee that he had imported in his trousers the day before. A. I. R. was surprised some, and put it down as the worst sting he ever got. I figure it out that the bumblebee family made up its mind that it was about time they got a little attention from A. I. R., and took this sneakin' prowlin' way of doin' it. Anyway, apis bumblebeus has scored with Uncle Amos stronger in a way than apis mellifica has recently.

* * *

Fishin's poor this season. My bees are stingin' uncommon hard. Cabbage worms put in a undue early appearance. Those squash bugs are meaner'n ever. So I ain't seein' much more light on the great universal plan than heretofore; and the reason of bein' at all, with cabbage worms, squash bugs and potato bugs thicker'n hair on a dog, ain't a clearin' up to me much. Poverty, hard gardenin' conditions, no fishin', and war news don't make life one continuoin' on-with-the-dance-and-let-joy-be-unconfined with me. But wait till I get up fishin' with friend J. L. Byer. He's invited me and I'm goin'.

THAT GOOD QUEEN

in your colony that is two years old. Are you going to try her another year? Are you going to gamble on your next Spring crop? Probably she has kept your colony booming for two years. If she hasn't you don't want her. If she has DON'T keep her. Why? Because she has "exhausted herself." She is no longer a young queen. Next spring she will fail you. Your colony will be weak. And in the spring rush the flow will be over before you can get another. Don't risk your 1919 crop for the sake of 75c. Why not requeen this fall with

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